



# ***LambdaUnite*<sup>®</sup> MultiService Switch (MSS)**

**Release 3.0.2**

Operations System Engineering Guide

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## IN Index

IN-1



# About this information product

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**Purpose** This document describes the external TL1 interface for *LambdaUnite*<sup>®</sup> MultiService Switch (MSS) in terms of TL1 command, responses, and notification definitions.

This document does not cover the specification of the TL1 protocol itself or that of underlying protocols of the OSI or IP stack.

**Reason for reissue** The present release “a” is the first version of this manual.

**Safety labels** This manual contains no safety labels.

**Conventions used** See “Conventions used in message descriptions” (3-2) for detailed information.

**Overview of the document**

This manual is structured as follows:

- Chapter 1 contains introductory information (TL1 message index and command state diagram)
- Chapter 2 contains AID definitions, used to address entities with TL1 commands or notifications
- Chapter 3 contains data type definitions, used to define parameters in TL1 commands or notifications
- Chapter 4 to chapter 12 contain the detailed requirements for the TL1 commands separated by:
  - Administration & security
  - Configuration management
  - Fault management
  - Transmission and cross connect handling
  - Protection
  - Performance monitoring
  - Synchronization
  - Software and database management
  - Data communications network.

The command and notification list of an entity group can be appended by an definition of the default database state after node creation (if applicable). This definition describes which entities are (automatically) created after start-up of the system from an empty database.

Within an entity group in a functional area the RTRV command is listed first, followed by any ENT, ED, DLT, OPR, ... command. REPT DBCHG notifications are directly described after the command which causes it. Other notifications are described after the whole command set per entity group. Parameters within an entity group are first described in the RTRV command, including default values, which might only be applicable when used as initial values (ENT commands) or default values (ED commands). Other commands in the entity group typically only reference to the definition in the RTRV command. Exceptions are made when the parameter differs syntactically or semantically between RTRV and other command.

- Chapter 13 contains a list of error codes and the related links to the corresponding TL1 commands.
- Chapter 14 contains a list of TL1 commands and the corresponding user privilege codes in alphabetical order.

**Documented feature set** This manual describes *LambdaUnite*<sup>®</sup> MSS release 4.0. For technical reasons some features have been documented that will not be available until later software versions. For precise information about the availability of features, please consult the Software Release Description. This provides details of the status at the time of software delivery.

**Intended use** This equipment shall be used only in accordance with intended use, corresponding installation and maintenance statements as specified in this documentation. Any other use or modification is prohibited.

## **Optical safety**

### **IEC Customer Laser Safety Guidelines**

Lucent Technologies declares that this product is compliant with all essential safety requirements as stated in IEC 60825-Part 1 and 2 “Safety of laser products” and “Safety of optical fibre telecommunication systems”. Furthermore Lucent Technologies declares that the warning statements on labels on this equipment are in accordance with the specified laser radiation class.

### **Optical Safety Declaration (if laser modules used)**

Lucent Technologies declares that this product is compliant with all essential safety requirements as stated in IEC 60825-Part 1 and 2 “Safety of Laser Products” and “Safety of Optical Fiber Telecommunication Systems”. Furthermore Lucent Technologies declares that the warning statements on labels on this equipment are in accordance with the specified laser radiation class.

## **Optical Fiber Communications**

This equipment contains an Optical Fiber Communications semiconductor laser/LED transmitter. The following Laser Safety Guidelines are provided for this product.

### **General Laser Information**

Optical fiber telecommunication systems, their associated test sets, and similar operating systems use semiconductor laser transmitters that emit infrared (IR) light at wavelengths between approximately 800 nanometers (nm) and 1600 nm. The emitted light is above the red end of the visible spectrum, which is normally not visible to the human eye. Although radiant energy at near-IR wavelengths is officially designated invisible, some people can see the shorter wavelength energy even at power levels several orders of magnitude below any that have been shown to cause injury to the eye.

Conventional lasers can produce an intense beam of monochromatic light. The term “monochromaticity” means a single wavelength output of pure color that may be visible or invisible to the eye. A conventional laser produces a small-size beam of light, and because the beam size is small the power density (also called irradiance) is very high. Consequently, lasers and laser products are subject to federal and applicable state regulations, as well as international standards, for their safe operation.

A conventional laser beam expands very little over distance, or is said to be very well collimated. Thus, conventional laser irradiance remains relatively constant over distance. However, lasers used in lightwave systems have a large beam divergence, typically 10 to 20 degrees. Here, irradiance obeys the inverse square law (doubling the distance reduces the irradiance by a factor of 4) and rapidly decreases over distance.

### **Lasers and Eye Damage**

The optical energy emitted by laser and high-radiance LEDs in the 400-1400 nm range may cause eye damage if absorbed by the retina. When a beam of light enters the eye, the eye magnifies and focuses the energy on the retina magnifying the irradiance. The irradiance of the energy that reaches the retina is approximately 10<sup>5</sup>, or 100,000 times more than at the cornea and, if sufficiently intense, may cause a retinal burn.



The damage mechanism at the wavelengths used in an optical fiber telecommunications is thermal in origin, i.e., damage caused by heating. Therefore, a specific amount of energy is required for a definite time to heat an area of retinal tissue. Damage to the retina occurs only when one looks at the light long enough that the product of the retinal irradiance and the viewing time exceeds the damage threshold. Optical energies above 1400 nm cause corneal and skin burns, but do not affect the retina. The thresholds for injury at wavelengths greater than 1400 nm are significantly higher than for wavelengths in the retinal hazard region.

### **Classification of Lasers**

Manufacturers of lasers and laser products in the U.S. are regulated by the Food and Drug Administration's Center for Devices and Radiological Health (FDA/CDRH) under 21 CFR 1040. These regulations require manufacturers to certify each laser or laser product as belonging to one of four major Classes: I, II, IIIa, IIIb, or IV. The International Electro-technical Commission is an international standards body that writes laser safety standards under IEC-60825. Classification schemes are similar with Classes divided into Classes 1, 1M, 2, 2M, 3R, 3B, and 4. Lasers are classified according to the accessible emission limits and their potential for causing injury. Optical fiber telecommunication systems are generally classified as Class I/1 because, under normal operating conditions, all energized laser transmitting circuit packs are terminated on optical fibers which enclose the laser energy with the fiber sheath forming a protective housing. Also, a protective housing/access panel is typically installed in front of the laser circuit pack shelves. The circuit packs themselves, however, may be FDA/CDRH Class I, IIIb, or IV or IEC Class 1, 1M, 3R, 3B, or 4.

### **Laser Safety Precautions for Optical Fiber Telecommunication Systems**

In its normal operating mode, an optical fiber telecommunication system is totally enclosed and presents no risk of eye injury. It is a Class I/1 system under the FDA and IEC classifications.

The fiber optic cables that interconnect various components of an optical fiber telecommunication system can disconnect or break, and may expose people to laser emissions. Also, certain measures and maintenance procedures may expose the technician to emission from the semiconductor laser during installation and servicing. Unlike more familiar laser devices such as solid-state and gas lasers, the emission

pattern of a semiconductor laser results in a highly divergent beam. In a divergent beam, the irradiance (power density) decreases rapidly with distance. The greater the distance, the less energy will enter the eye, and the less potential risk for eye injury. Inadvertently viewing an un-terminated fiber or damaged fiber with the unaided eye at distances greater than 5 to 6 inches normally will not cause eye injury, provided the power in the fiber is less than a few milliwatts at the near IR wavelengths and a few tens of milliwatts at the far IR wavelengths. However, damage may occur if an optical instrument such as a microscope, magnifying glass, or eye loupe is used to stare at the energized fiber end.



## CAUTION

*Use of controls, adjustments, and procedures other than those specified herein may result in hazardous laser radiation exposure.*

### Laser Safety Precautions for Enclosed Systems

Under normal operating conditions, optical fiber telecommunication systems are completely enclosed; nonetheless, the following precautions shall be observed:

1. Because of the potential for eye damage, technicians should not stare into optical connectors or broken fibers
2. Under no circumstance shall laser/fiber optic operations be performed by a technician before satisfactorily completing an approved training course
3. Since viewing laser emissions directly in excess of Class I/1 limits with an optical instrument such as an eye loupe greatly increases the risk of eye damage, appropriate labels must appear in plain view, in close proximity to the optical port on the protective housing/access panel of the terminal equipment.

### **Laser Safety Precautions for Unenclosed Systems**

During service, maintenance, or restoration, an optical fiber telecommunication system is considered unenclosed. Under these conditions, follow these practices:

1. Only authorized, trained personnel shall be permitted to do service, maintenance and restoration. Avoid exposing the eye to emissions from un-terminated, energized optical connectors at close distances. Laser modules associated with the optical ports of laser circuit packs are typically recessed, which limits the exposure distance. Optical port shutters, Automatic Power Reduction (APR), and Automatic Power Shut Down (APSD) are engineering controls that are also used to limit emissions. However, technicians removing or replacing laser circuit packs should not stare or look directly into the optical port with optical instruments or magnifying lenses. (Normal eye wear or indirect viewing instruments such as Find-R-Scopes are not considered magnifying lenses or optical instruments.)
2. Only authorized, trained personnel shall use optical test equipment during installation or servicing since this equipment contains semiconductor lasers (Some examples of optical test equipment are Optical Time Domain Reflectometers (OTDR's), Hand-Held Loss Test Sets.)
3. Under no circumstances shall any personnel scan a fiber with an optical test set without verifying that all laser sources on the fiber are turned off
4. All unauthorized personnel shall be excluded from the immediate area of the optical fiber telecommunication systems during installation and service.

Consult ANSI Z136.2, American National Standard for Safe Use of Lasers in the U.S.; or, outside the U.S., IEC-60825, Part 2 for guidance on the safe use of optical fiber optic communication in the workplace.

For the optical specifications please refer to the chapter "Technical specifications" in the Applications and Planning Guide.

**Technical Documentation** The technical documentation as required by the Conformity Assessment procedure is kept at Lucent Technologies location which is responsible for this product. For more information please contact your local Lucent Technologies representative.

**How to comment** To comment on this information product, go to the Online Comment Form (<http://www.lucent-info.com/comments/enus/>) or email your comments to the Comments Hotline ([comments@lucent.com](mailto:comments@lucent.com)).



# 1 General information

## Overview

---

**Purpose** This chapter contains introductory information.

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| TL1 command state diagram      | <a href="#">1-11</a> |
| Data base change notifications | <a href="#">1-13</a> |
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# TL1 message index

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**List** The table below lists all supported TL1 commands and notifications in alphabetical order.

| Message                    | Described in section                                             |
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| ALW-MSG                    | “ALW-MSG: Allow message” (5-33)                                  |
| APPLY                      | “APPLY: Apply software generic” (11-42)                          |
| APPLY notification         | “APPLY notification” (11-46)                                     |
| CANC-USER                  | “CANC-USER: Cancel user” (4-11)                                  |
| CANC-USER-SECU             | “CANC-USER-SECU: Cancel user security” (4-13)                    |
| CHG-ACCMD                  | “CHG-ACCMD: Change access mode” (7-249)                          |
| CNVT-CCT                   | “CNVT-CCT: Convert cross-connection topology” (7-69)             |
| CONN-TACC                  | “CONN-TACC: Connect test access” (7-241)                         |
| COPY-RFILE                 | “COPY-RFILE: Copy remote file” (11-33)                           |
| CPY-MEM                    | “CPY-MEM: Copy memory” (11-20)                                   |
| CPY-MEM notification       | “CPY-NEM Notification” (11-31)                                   |
| DISC-TACC                  | “DISC-TACC: Disconnect test access” (7-253)                      |
| DLT-ASAP-PROF              | “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26) |
| DLT-ASAP-PROF notification | “DLT-ASAP-PROF notification” (6-28)                              |
| DLT-CRS                    | “DLT-CRS: Delete cross-connection” (7-53)                        |
| DLT-CRS notification       | “DLT-CRS notification” (7-61)                                    |
| DLT-CRS-FECOM              | “DLT-CRS-FECOM: Delete transparent DCC cross-connection” (12-35) |
| DLT-CRS-FECOM notification | “DLT-CRS-FECOM notification” (12-38)                             |
| DLT-EPORT Notification     | “DLT-EPORT notification” (7-172)                                 |
| DLT-EQPT (Slot)            | “DLT-EQPT (slot): Delete equipment (slot)” (5-112)               |
| DLT-EQPT (Socket)          | “DLT-EQPT (Socket): Delete equipment” (5-151)                    |
| DLT-EQPT (CP) notification | “DLT-EQPT notification” (5-177)                                  |
| DLT-FECOM notification     | “DLT-FECOM notification” (12-25)                                 |
| DLT-IP-MAP                 | “DLT-IP-MAP: Delete TCP/IP map” (12-110)                         |
| DLT-IP-MAP notification    | “DLT-IP-MAP notification” (12-112)                               |
| DLT-PROTN-GRP              | “DLT-PROTN-GRP notification” (8-106)                             |
| DLT-PROTN-GRP notification | “DLT-PROTN-GRP notification” (8-106)                             |

| Message                            | Described in section                                                                                    |
|------------------------------------|---------------------------------------------------------------------------------------------------------|
| DLT-rr (Port, STM1) notification   | “DLT-STM1 notification” (5-313)                                                                         |
| DLT-rr (Port, STM1E) notification  | “DLT- STM1E notification” (5-294)                                                                       |
| DLT-rr (Port, STM4) notification   | “DLT-STM4 notification” (5-332)                                                                         |
| DLT-rr (Port, STM16) notification  | “DLT-STM16 notification” (5-355)                                                                        |
| DLT-rr (Port, STM64) notification  | “DLT-STM64 notification” (5-378)                                                                        |
| DLT-rr (Port, STM256) notification | “DLT-STM256 notification” (5-397)                                                                       |
| DLT-rr (Port, OC3) notification    | “DLT-OC3 notification” (5-416)                                                                          |
| DLT-rr (Port, OC12) notification   | “DLT-OC12 notification” (5-435)                                                                         |
| DLT-rr (Port, OC48) notification   | “DLT-OC48 notification” (5-456)                                                                         |
| DLT-rr (Port, OC192) notification  | “DLT-OC192 notification” (5-477)                                                                        |
| DLT-rr (Port, OC768) notification  | “DLT-OC768 notification” (5-496)                                                                        |
| DLT-rr (Trib, VC3) notification    | “DLT-VC3 notification” (5-532)                                                                          |
| DLT-rr (Trib, STS1) notification   | “DLT-STs1 notification” (5-539)                                                                         |
| ED-TCA-PROF                        | “DLT-TCA-PROF: Delete TCA Profile” (9-119)                                                              |
| DLT-ULSDCC-L3                      | “DLT-ULSDCC-L3: Delete a node ID other than node-1” (12-74)                                             |
| DLT-ULSDCC-L3 notification         | “DLT-ULSDCC-L3 Notification” (12-77)                                                                    |
| DLT-ULSDCC-L4                      | “DLT-ULSDCC-L4: Delete TARP manual adjacent NSAP address in layer 4 of the specified OSI stack” (12-91) |
| DLT-ULSDCC-L4 notification         | “DLT-ULSDCC-L4 notification” (12-93)                                                                    |
| DLT-USER-SECU                      | “DLT-USER-SECU: Delete user security” (4-54)                                                            |
| DLT-USER-SECU notification         | “DLT-USER-SECU notification” (4-57)                                                                     |
| DLT-VCG notification               | “DLT-VCG notification” (7-199)                                                                          |
| DLT-VCGTRIB notification           | “DLT-VCGTRIB notification” (7-228)                                                                      |
| DLT-VRTSW notification             | “DLT-VRTSW notification” (7-146)                                                                        |
| ED-ASAP-PROF                       | “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)                                           |
| ED-ASAP-PROF notification          | “ED-ASAP-PROF notification” (6-24)                                                                      |
| ED-CRS                             | “ED-CRS: Edit Cross-connection” (7-46)                                                                  |
| ED-CRS notification                | “ED-CRS notification” (7-51)                                                                            |
| ED-DAT                             | “ED-DAT: Edit date and time” (5-65)                                                                     |
| ED-DAT notification                | “ED-DAT notification” (5-68)                                                                            |
| ED-EPORT                           | “ED-EPORT: Edit Ethernet port” (7-164)                                                                  |
| ED-EPORT notification              | “ED-EPORT notification” (7-170)                                                                         |
| ED-EQPT (System)                   | “ED-EQPT (system): Edit equipment (system)” (5-49)                                                      |

| Message                             | Described in section                                  |
|-------------------------------------|-------------------------------------------------------|
| ED-EQPT (System) notification       | “ED-EQPT (system) notification” (5-53)                |
| ED-EQPT (Shelf)                     | “ED-EQPT (shelf): Edit equipment (shelf)” (5-84)      |
| ED-EQPT (Shelf) notification        | “ED-EQPT (shelf) notification” (5-86)                 |
| ED-EQPT (Slot)                      | “ED-EQPT (slot): Edit equipment (slot)” (5-104)       |
| ED-EQPT (Socket)                    | “ED-EQPT (Socket): Edit equipment” (5-142)            |
| ED-EQPT (Slot) notification         | “ED-EQPT notification” (5-108)                        |
| ED-EQPT (Circuit Pack)              | “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172) |
| ED-EQPT (Circuit Pack) notification | “ED-EQPT (cp) notification” (5-176)                   |
| ED-FECOM notification               | “ED-FECOM notification” (12-21)                       |
| ED-FETID                            | “ED-FETID: Edit Far End Target Identifier” (8-171)    |
| ED-MAP-RING                         | “ED-MAP-RING: Edit map ring” (8-165)                  |
| ED-NE                               | “ED-NE: Edit NE” (12-8)                               |
| ED-NE notification                  | “ED-NE notification” (12-11)                          |
| ED-NE-SECU                          | “ED-NE-SECU: Edit NE security” (4-20)                 |
| ED-NE-SECU notification             | “ED-NE-SECU notification” (4-22)                      |
| ED-PID                              | “ED-PID: Edit password identifier” (4-49)             |
| ED-PID notification                 | “ED-PID notification” (4-53)                          |
| ED-PROTN-GRP                        | “ED-PROTN-GRP: Edit protection group” (8-80)          |
| ED-PROTN-GRP notification           | “ED-PROTN-GRP notification” (8-92)                    |
| ED-rr (Port, STM1)                  | “ED-STM1: Edit STM1 port” (5-296)                     |
| ED-rr (Port, STM1) notification     | “ED-STM1 notification” (5-305)                        |
| ED-STM1E                            | “ED-STM1E: Edit STM1E port” (5-279)                   |
| ED-STM1E notification               | “ED-STM1E notification” (5-286)                       |
| ED-rr (Port, STM4)                  | “ED-STM4: Edit STM4 port” (5-315)                     |
| ED-rr (Port, STM4) notification     | “ED-STM4 notification” (5-324)                        |
| ED-rr (Port, STM16)                 | “ED-STM16: Edit STM16 port” (5-334)                   |
| ED-rr (Port, STM16) notification    | “ED-STM16 notification” (5-347)                       |
| ED-rr (Port, STM64)                 | “ED-STM64: Edit STM64 port” (5-357)                   |
| ED-rr (Port, STM64) notification    | “ED-STM64 notification” (5-368)                       |
| ED-rr (Port, STM256)                | “ED-STM256: Edit STM256 port” (5-380)                 |
| ED-rr (Port, STM256) notification   | “ED-STM256 notification” (5-389)                      |
| ED-rr (Port, OC3)                   | “ED-OC3: Edit OC3 port” (5-399)                       |



| Message                             | Described in section                                                       |
|-------------------------------------|----------------------------------------------------------------------------|
| ED-rr (Port, OC3) notification      | “ED-OC3 notification” (5-408)                                              |
| ED-rr (Port, OC12)                  | “ED-OC12: Edit OC12 port” (5-418)                                          |
| ED-rr (Port, OC12) notification     | “ED-OC12 notification” (5-427)                                             |
| ED-rr (Port, OC48)                  | “ED-OC48: Edit OC48 port” (5-437)                                          |
| ED-rr (Port, OC48) notification     | “ED-OC48 notification” (5-448)                                             |
| ED-rr (Port, OC192)                 | “ED-OC192: Edit OC192 port” (5-458)                                        |
| ED-rr (Port, OC192) notification    | “ED-OC192 notification” (5-468)                                            |
| ED-rr (Port, OC768)                 | “ED-OC768: Edit OC768 port” (5-479)                                        |
| ED-rr (Port, OC768) notification    | “ED-OC768 notification” (5-488)                                            |
| ED-rr (Trib, VC3)                   | “ED-VC3: Edit VC3 tributary” (5-515)                                       |
| ED-rr (Trib, VC3) notification      | “ED-VC3 notification” (5-526)                                              |
| ED-rr (Trib, STS1)                  | “ED-ST51: Edit STS1 tributary” (5-521)                                     |
| ED-rr (Trib, STS1) notification     | “ED-ST51 notification” (5-533)                                             |
| ED-STATE-EQPT (System)              | “ED-STATE-EQPT (system): Edit equipment state” (5-42)                      |
| ED-STATE-EQPT (System) notification | “ED-STATE-EQPT (system) notification” (5-44)                               |
| ED-STATE-EQPT (Slot) notification   | “ED-STATE-EQPT (slot) notification” (5-123)                                |
| ED-STATE-EQPT (CP) notification     | “ED-STATE-EQPT notification” (5-182)                                       |
| ED-TCA-PROF                         | “ED-TCA-PROF: Edit TCA profile” (9-81)                                     |
| ED-ULSDCC-L3                        | “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67) |
| ED-ULSDCC-L3 notification           | “ED-ULSDCC-L3 notification” (12-72)                                        |
| ED-USER                             | “ED-USER: Edit user” (4-46)                                                |
| ED-USER notification                | “ED-USER notification” (4-48)                                              |
| ED-USER-SECU                        | “ED-USER-SECU: Edit user security” (4-39)                                  |
| ED-USER-SECU notification           | “ED-USER-SECU notification” (4-44)                                         |
| ED-VCG                              | “ED-VCG: Edit virtual concatenation group” (7-189)                         |
| ED-VCG notification                 | “ED-VCG notification” (7-196)                                              |
| ED-VCGTRIB                          | “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)           |
| ED-VCGTRIB notification             | “ED-VCGTRIB notification” (7-225)                                          |
| ED-VRTSW                            | “ED-VRTSW: Edit Virtual Switch” (7-141)                                    |
| ED-VRTSW notification               | “ED-VRTSW notification” (7-144)                                            |
| ENT-ASAP-PROF                       | “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)            |

| Message                            | Described in section                                            |
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| ENT-ASAP-PROF notification         | “ENT-ASAP-PROF notification” (6-19)                             |
| ENT-CRS                            | “ENT-CRS: Enter cross-connection” (7-25)                        |
| ENT-CRS notification               | “ENT-CRS notification” (7-44)                                   |
| ENT-CRS-FECOM                      | “ENT-CRS-FECOM: Enter transparent DCC cross-connection” (12-31) |
| ENT-CRS-FECOM notification         | “ENT-CRS-FECOM notification” (12-34)                            |
| ENT-EPORT notification             | “ENT-EPORT notification” (7-161)                                |
| ENT-EQPT (Slot)                    | “ENT-EQPT (slot): Enter equipment (slot)” (5-95)                |
| ENT-EQPT (Socket)                  | “ENT-EQPT (Socket): Enter equipment” (5-138)                    |
| ENT-EQPT (CP) notification         | “ENT-EQPT notification” (5-171)                                 |
| ENT-FECOM                          | “ENT-FECOM: Enter DCC channel related parameters” (12-16)       |
| ENT-FECOM notification             | “ENT-FECOM notification” (12-23)                                |
| ENT-FECOM-LAN                      | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)           |
| ENT-FECOM-LAN notification         | “ENT-FECOM-LAN notification” (12-50)                            |
| ENT-IP-MAP                         | “ENT-IP-MAP: Enter TCP/IP map” (12-106)                         |
| ENT-IP-MAP notification            | “ENT-IP-MAP Notification” (12-109)                              |
| ENT-PROTN-GRP                      | “ENT-PROTN-GRP: Enter protection group” (8-56)                  |
| ENT-PROTN-GRP notification         | “ENT-PROTN-GRP notification” (8-74)                             |
| ENT-ROLL                           | “ENT-ROLL: Enter roll” (7-62)                                   |
| ENT-rr (Port, STM1) notification   | “ENT-STM1 notification” (5-309)                                 |
| ENT-rr (Port, STM1E) notification  | “ENT- STM1E notification” (5-290)                               |
| ENT-rr (Port, STM4) notification   | “ENT-STM4 notification” (5-328)                                 |
| ENT-rr (Port, STM16) notification  | “ENT-STM16 notification” (5-351)                                |
| ENT-rr (Port, STM64) notification  | “ENT-STM64 notification” (5-373)                                |
| ENT-rr (Port, STM256) notification | “ENT-STM256 notification” (5-393)                               |
| ENT-rr (Port, OC3) notification    | “ENT-OC3 notification” (5-412)                                  |
| ENT-rr (Port, OC12) notification   | “ENT-OC12 notification” (5-431)                                 |
| ENT-rr (Port, OC48) notification   | “ENT-OC48 notification” (5-452)                                 |
| ENT-rr (Port, OC192) notification  | “ENT-OC192 notification” (5-473)                                |
| ENT-rr (Port, OC768) notification  | “ENT-OC768 notification” (5-492)                                |
| ENT-rr (Trib, VC3) notification    | “ENT-VC3 notification” (5-529)                                  |
| ENT-rr (Trib, STS1) notification   | “ENT-STs1 notification” (5-536)                                 |
| ENT-TCA-PROF                       | “ENT-TCA-PROF: Enter TCA Profile” (9-60)                        |

| Message                    | Described in section                                                         |
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| ENT-ULS                    | “ENT-ULS: Enter upper layer stack” (12-98)                                   |
| ENT-ULS notification       | “ENT-ULS Notification” (12-101)                                              |
| ENT-ULSDCC-L3              | “ENT-ULSDCC-L3: Create a further OSI node” (12-60)                           |
| ENT-ULSDCC-L3 notification | “ENT-ULSDCC-L3 Notification” (12-65)                                         |
| ENT-ULSDCC-L4              | “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks ” (12-84) |
| ENT-ULSDCC-L4 notification | “ENT-ULSDCC-L4 notification” (12-89)                                         |
| ENT-USER-SECU              | “ENT-USER-SECU: Enter user security” (4-32)                                  |
| ENT-USER-SECU notification | “ENT-USER-SECU notification” (4-37)                                          |
| ENT-VCG notification       | “ENT-VCG notification” (7-186)                                               |
| ENT-VCGTRIB notification   | “ENT-VCGTRIB notification” (7-216)                                           |
| ENT-VRTSW notification     | “ENT-VRTSW notification” (7-139)                                             |
| INH-MSG                    | “INH-MSG: Inhibit message” (5-31)                                            |
| INIT-EQPT (Slot)           | “INIT-EQPT (slot): Initialize equipment (slot)” (5-124)                      |
| INIT-SYS                   | “INIT-SYS: Initialize System” (5-73)                                         |
| OPR-EXT-CONT               | “OPR-EXT-CONT: Operate External Control” (6-90)                              |
| OPR-EXT-CONT notification  | “OPR-EXT-CONT notification” (6-92)                                           |
| OPR-LPBK (Port)            | “OPR-LPBK: Operate loopback (here facility loopback)” (7-107)                |
| OPR-LPBK (Trib)            | “OPR-LPBK: Operate loopback (here facility loopback)” (7-107)                |
| OPR-PROTNSW                | “OPR-PROTNSW: Operate protection switch” (8-109)                             |
| OPR-SYNCNSW                | “OPR-SYNCNSW: Operate synchronization switch ” (10-31)                       |
| OPR-VCGTRIB                | “OPR-VCGTRIB: Operate virtual concatenation group tributary” (7-229)         |
| REPT ALM                   | “REPT ALM: Report alarm” (6-44)                                              |
| REPT ALM ENV               | “REPT-ALM-ENV: Report Alarm Environment” (6-72)                              |
| REPT DBCHG                 | “REPT DBCHG: Report data base change” (5-62)                                 |
| REPT EVT                   | “REPT EVT: Report event” (6-47)                                              |
| REPT EVT FXFR              | “REPT EVT FXFR: Report Event FXFR” (11-39)                                   |
| REPT SW                    | “REPT SW: Report switch” (8-133)                                             |
| RLS-EXT-CONT               | “RLS-EXT-CONT: Release external control” (6-93)                              |
| RLS-EXT-CONT notification  | “RLS-EXT-CONT notification” (6-95)                                           |
| RLS-LPBK (Port)            | “RLS-LPBK: Release loopback (here facility loopback)” (7-114)                |
| RLS-LPBK (Trib)            | “RLS-LPBK: Release loopback (here cross-connection loopback)” (7-97)         |
| RLS-PROTNSW                | “RLS-PROTNSW: Release protection switch” (8-125)                             |
| RLS-SYNCNSW                | “RLS-SYNCNSW: Release synchronization switch” (10-37)                        |

| Message                  | Described in section                                                   |
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| RTRV-ACTL-CONT           | “RTRV-ACTL-CONT: Retrieve actual condition types” (6-80)               |
| RTRV-ACTLCP              | “RTRV-ACTLCP: Retrieve acceptable circuit pack list” (5-35)            |
| RTRV-ALM                 | “RTRV-ALM: Retrieve alarm” (6-30)                                      |
| RTRV-ALM-ENV             | “RTRV-ALM-ENV: Retrieve alarm environment” (6-60)                      |
| RTRV-AO                  | “RTRV-AO: Retrieve Autonomous Output” (5-54)                           |
| RTRV-ASAP-ASGNMT         | “RTRV-ASAP-ASGNMT: Retrieve ASAP assignment” (6-14)                    |
| RTRV-ASAP-PROF           | “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9)                          |
| RTRV-ATTR-CONT           | “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64)                 |
| RTRV-ATTR-ENV            | “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64)                 |
| RTRV-ATTR-MSG            | “RTRV-ATTR-MSG: Retrieve attribute message” (5-28)                     |
| RTRV-COND                | “RTRV-COND: Retrieve condition” (6-37)                                 |
| RTRV-CRS                 | “RTRV-CRS: Retrieve cross-connection” (7-6)                            |
| RTRV-CRS-FECOM           | “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27)    |
| RTRV-EPM                 | “RTRV-EPM: Ethernet performance monitoring” (9-15)                     |
| RTRV-EPORT               | “RTRV-EPORT: Retrieve Ethernet port” (7-149)                           |
| RTRV-EQPT (System)       | “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)               |
| RTRV-EQPT (Shelf)        | “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81)                 |
| RTRV-EQPT (Bay)          | “RTRV-EQPT (bay): Retrieve Equipment (bay)” (5-77)                     |
| RTRV-EQPT (Slot)         | “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89)                   |
| RTRV-EQPT (Circuit Pack) | “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164)            |
| RTRV-EQPT (Socket)       | “RTRV-EQPT (Socket): Retrieve equipment” (5-130)                       |
| RTRV-EXT-CONT            | “RTRV-EXT-CONT: Retrieve external control” (6-83)                      |
| RTRV-FECOM               | “RTRV-FECOM: Retrieve DCC related parameters” (12-13)                  |
| RTRV-FECOM-LAN           | “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40)      |
| RTRV-HDR                 | “RTRV-HDR: Retrieve header” (5-8)                                      |
| RTRV-IP-MAP              | “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103)                            |
| RTRV-LOG-ALM             | “RTRV-LOG-ALM: Retrieve log alarm” (6-54)                              |
| RTRV-LOG-NTFCN           | “RTRV-LOG-NTFCN: Retrieve notification Log” (5-58)                     |
| RTRV-LOG-PROTNSW         | “RTRV-LOG-PROTNSW: Retrieve log protection switch” (8-150)             |
| RTRV-LPBK (Port)         | “RTRV-LPBK: Retrieve loopback (here facility loopback)” (7-102)        |
| RTRV-LPBK (Trib)         | “RTRV-LPBK: Retrieve loopback (here cross-connection loopback)” (7-85) |
| RTRV-MAP-NEIGHBOR        | “RTRV-MAP-NEIGHBOR: Retrieve map neighbor” (12-114)                    |
| RTRV-MAP-NETWORK         | “RTRV-MAP-NETWORK: Retrieve network map” (12-119)                      |

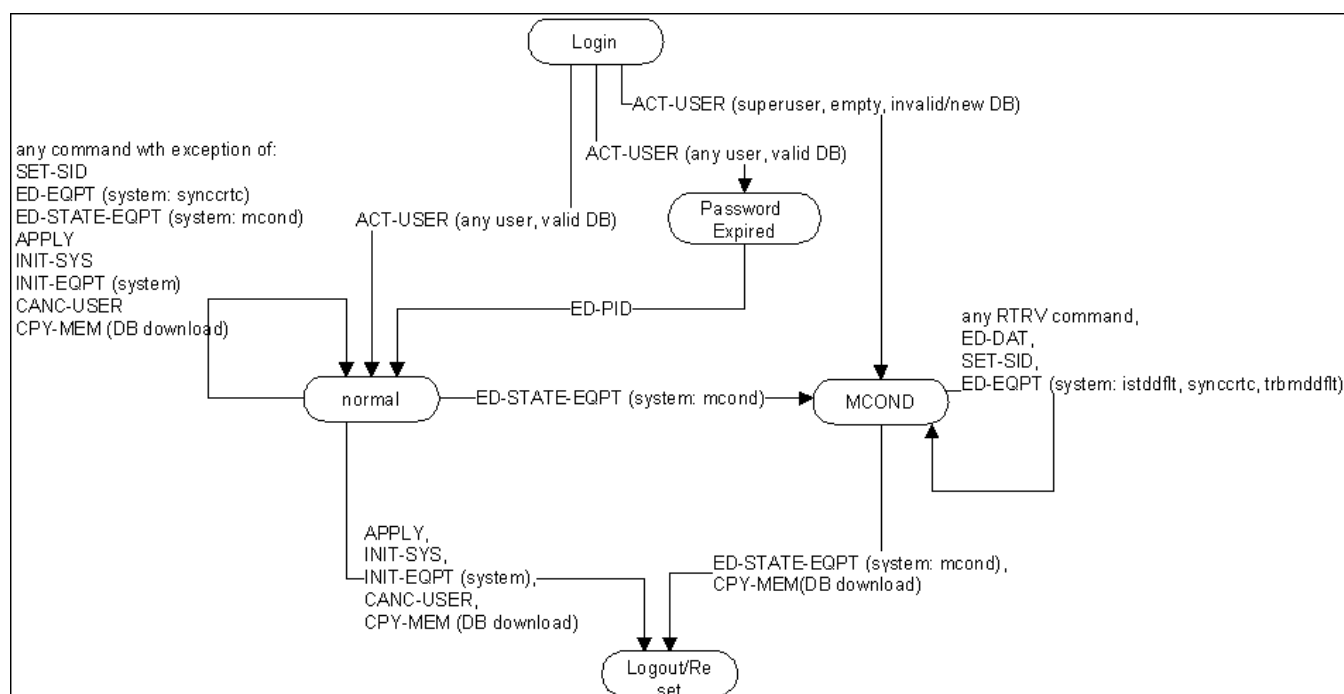
| Message                        | Described in section                                                    |
|--------------------------------|-------------------------------------------------------------------------|
| RTRV-MAP-RING                  | “RTRV-MAP-RING: Retrieve map ring” (8-158)                              |
| RTRV-NE                        | “RTRV-NE: Retrieve NE” (12-5)                                           |
| RTRV-NE-SECU                   | “RTRV-NE-SECU: Retrieve NE security” (4-17)                             |
| RTRV-OW                        | “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120)                    |
| RTRV-PM                        | “RTRV-PM: Retrieve performance monitoring” (9-7)                        |
| RTRV-PRMTR-DATA                | “RTRV-PRMTR-DATA: Retrieve parameter data” (11-3)                       |
| RTRV-PRMTR-SFTWR               | “RTRV-PRMTR-SFTWR: Retrieve parameter software” (11-13)                 |
| RTRV-PROTN-GRP                 | “RTRV-PROTN-GRP: Retrieve protection group” (8-13)                      |
| RTRV-rr (Port, ALL)            | “RTRV-ALL: Retrieve all” (5-276)                                        |
| RTRV-rr (Port, STM1)           | “RTRV-STM1: Retrieve STM1 port” (5-194)                                 |
| RTRV-rr (Port, STM1E)          | “RTRV-STM1E: Retrieve STM1E port” (5-187)                               |
| RTRV-rr (Port, STM4)           | “RTRV-STM4: Retrieve STM4 port” (5-201)                                 |
| RTRV-rr (Port, STM16)          | “RTRV-STM16: Retrieve STM16 port” (5-209)                               |
| RTRV-rr (Port, STM64)          | “RTRV-STM64: Retrieve STM64 port” (5-223)                               |
| RTRV-rr (Port, STM256)         | “RTRV-STM256: Retrieve STM256 port” (5-232)                             |
| RTRV-rr (Port, OC3)            | “RTRV-OC3: Retrieve OC3 port” (5-238)                                   |
| RTRV-rr (Port, OC12)           | “RTRV-OC12: Retrieve OC12 port” (5-245)                                 |
| RTRV-rr (Port, OC48)           | “RTRV-OC48: Retrieve OC48 port” (5-252)                                 |
| RTRV-rr (Port, OC192)          | “RTRV-OC192: Retrieve OC192 port” (5-261)                               |
| RTRV-rr (Port, OC768)          | “RTRV-OC768: Retrieve OC768 port” (5-269)                               |
| RTRV-rr (Trib, ALL)            | “RTRV-ALL: Retrieve all” (5-512)                                        |
| RTRV-rr (Trib, VC3)            | “RTRV-VC3: Retrieve VC3 tributary” (5-499)                              |
| RTRV-rr (Trib, STS1)           | “RTRV-STs1: Retrieve STS1 tributary” (5-507)                            |
| RTRV-STATE-EQPT (System)       | “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38)             |
| RTRV-STATE-EQPT (Slot)         | “RTRV-STATE-EQPT (slot): Retrieve equipment state (slot)” (5-120)       |
| RTRV-STATE-EQPT (Circuit Pack) | “RTRV-STATE-EQPT (CP): Retrieve equipment state (circuit pack)” (5-179) |
| RTRV-STATE-EQPT (Socket)       | “RTRV-STATE-EQPT (Socket): Retrieve equipment state ” (5-157)           |
| RTRV-STM1E                     | “RTRV-STM1E: Retrieve STM1E port” (5-187)                               |
| RTRV-SYNCN                     | “RTRV-SYNCN: Retrieve synchronization” (10-3)                           |
| RTRV-TACC                      | “RTRV-TACC: Retrieve test access” (7-236)                               |
| RTRV-TCA-PROF                  | “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25)                            |
| RTRV-ULS                       | “RTRV-ULS: Retrieve upper layer stack” (12-95)                          |

| Message                    | Described in section                                                   |
|----------------------------|------------------------------------------------------------------------|
| RTRV-ULSDCC-L3             | “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54)          |
| RTRV-ULSDCC-L4             | “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80)      |
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## TL1 command state diagram

The following state diagram provides an overview in which system states which TL1 commands are allowed. States and transitions are explained below the figure.



### States

- **Login**: initial state, creation of user session
- **Password expired**: entered after login with valid database and when the user's password has expired
- **MCOND**: system is in maintenance condition (see parameter *mcond* in RTRV-STATE-EQPT (system))
- **normal**: system is in normal mode (see parameter *mcond* in RTRV-STATE-EQPT (system))
- **Logout/Reset**: termination of a user session via logout or a command which leads to a system or CTL controller reset

### Transitions

Transitions between the states are performed upon execution of the TL1 command(s) on the arrows between the states. An exception are

the transitions from the **Login** state, which are automatically performed based on the database state (see parameter **dbstate** in RTRV-STATE-EQPT (system)) and the password expiration information (see parameter page in RTRV-USER-SECU).





## Data base change notifications

---

### **Object creation - ENT notification**

The creation/establishment of an entity/instance is reported by means of an ENT (Enter) notification. It shall consists of:

- entity class name
- instance/identifier/key
- all attribute values of the instance as defined in the notification section; example: ENT-OC48 notification
- entity class name: OC48
- instance/identifier/key: port AID
- attribute values: all attribute values as defined in the corresponding ENT-OC48 notification section.

The attributes for an entity can be classified as follows:

- inputted: the reported attribute value is specified in the corresponding command request
- modifiable: the reported attribute value is the specified default value (with semantics of initial value) and the attribute itself is modifiable by means of corresponding ED command
- state: the reported attribute value is the specified default value (with semantics of initial value) and the attribute itself is modifiable directly by means of corresponding ED command. The modification can ever be triggered as side affect of a command or by anautonomous event.

Examples for the different attribute classes

- inputted: 1+1 line/ms protection group: attribute wkg - worker port
- modifiable: 1+1 line/ms protection group: attribute wkg - worker port
- state: port: attribute crstat - Constituent Rates Status list (autonomous change) in case of adaptive mode
- port: attribute: fsflpbkstat - Far Side Facililiy Loopback Status(side effect of command)

Note: Protection state information is not contained in any db change notification.

**Object modification - ED notification**

The modification for some attributes of an entity/instance is reported by means of an ED (Edit) notification. It shall consists of:

- entity class name
- instance/identifier/key
- all attribute values which were modified  
This includes all attributes which came into existence by modifying another attribute. (see example below). This also means, that attributes which are already handled internally but where not applicable up to now and therefore were not reported to the manager, must not be reported to the manager, if they became applicable. Reason: The manager can not know the internal default values. If an ED command for an (or the) entity/instance attribute(s) does not modify the attribute(s) value, because (for each individual attribute) `new_attribute_value = old_attribute_value`, no ED notification shall be sent per requirement ID 61381. However, empty notifications, i.e. notifications with no attributes and attribute values, can occur. These empty notifications do not impact the managers, but nevertheless should be avoided. Example: ED-OC48 notification
- entity class name: OC48
- instance/identifier/key: port AID
- attribute values: all attribute values which have been modified.  
Thus the corresponding ED notification section describes only the superset of attributes where changes are reported. Which attributes are really contained in a concrete scenario is described either in the detailed behaviour section (if the change is triggered by a command) or in autonomous event section (if the changes it triggered by an spontaneous event). Example: ED-OC48 notification of new attributes.
- entity class name: STM16
- instance/identifier/key: port AID
- action: `istd` is set from SDH to SONET  
This action causes that attributes come into existence by modifying *istd*. In detail this means: - attributes, which are named differently in the two standards - attributes, which are only applicable in one standard must be reported. E.g. for the change from SDH to SONET: - *sdthr* (in SDH called *degthr*) - *felpm* (in SDH called *femspm*) - *z0outmode* (new parameter in SONET) must be reported.

Note: Sometimes TL1 uses a different command verb instead of ED for modification commands (e.g. SET). Nevertheless, the statements of this chapter is also valid for these.

**Object deletion - DLT notification**

he deletion/removal of an entity/instance is reported by means of an DLT (Delete) notification. It shall consists of:

- entity class name
- instance/identifier/key

Example: DLT-OC48 notification

- entity class name: OC48
- instance/identifier/key: port AID.



## Sequence constraints

---

In order to allow the manager a proper interpretation of the received notifications, the NE must assure same sequence constraints. This section specifies these sequence constraints.

### **Report object creation first**

The first notification for an entity is the *db change* reporting that a new entity has been created/established. After this *establish* notification, all other types of notifications may be issued for this instance.

### **Report creation according to AID hierarchy**

If several instances of entities are created in the context of one stimuli, the order of the *establish* notification is according to the hierarchy of the AID structure. The *establish* notification for a subordinate entity is not reported before the *establish* notification of a superior entity.

Example: The *establish* notification for a port should be sent before the *establish* notification of a tributary being a member of this port.

### **Report object deletion last**

The last notification for an entity is the *dbchange* reporting that an entity has been deleted/removed.

### **Report deletion according to AID hierarchy**

If several instances of entities are deleted in the context of one stimuli, the order of the *delete* notification is according to the hierarchy of the AID structure. The *delete* notification for a superior entity is not reported before the *delete* notification of a subordinate entity.

Example: The *delete* notification for a tributary should be sent before the *delete* notification of a port containing that tributary.





## 2 AID structure

### Overview

---

**Purpose** This section contains the requirements for Access IDentifiers (AID) for the TL1 interface of the *LambdaUnite*<sup>®</sup> MSS.

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# Introduction

## Overview

---

**Purpose** This section defines the names which will be used to identify physical and logical entities for input and output at the TL1 Interface for the *LambdaUnite*® MSS products.

This document re-uses the general terminology and BWM Access Identifier (AID) Syntax. It is assumed that the reader is familiar with the terms and syntax.

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## AID syntax

---

**General** The following specification characters will be used throughout this document as a vehicle for defining the syntax.

| Rule           | Description                                                                                                      |
|----------------|------------------------------------------------------------------------------------------------------------------|
| ::=            | Assignment of a lexical rule to a token or token class.                                                          |
| <b>literal</b> | Characters which must appear literally as typed appear in bold..                                                 |
|                | The "exclusive or" token means that exactly one item in the list must be present.                                |
| { }            | Items in { } means one of the items in the set must be present.                                                  |
| [ ]            | Items in [ ] means one of the items in the set may optionally be present.                                        |
| ( )            | Items in ( ) can be used for grouping to define different precedence for the operators  , <sup>n</sup> and *.    |
| -              | A dash indicates a range of values where any item in the range may be present.                                   |
| ,              | A ", " is used as a list item separator in the specification grammar.                                            |
| a <sup>*</sup> | A superscript * specifies 0 or more repetitions of the previous token that can be present.                       |
| a <sup>+</sup> | A superscript + specifies 1 or more repetitions of the previous token that can be present.                       |
| a <sup>n</sup> | A superscript n is a number which specifies the number of repetitions of the previous token that can be present. |
| " "            | Blanks between tokens in an expression means to concatenate the tokens.                                          |





## Access Identifier (AID) syntax

---

AIDs can be either Simple\_AIDs, or Compound\_AIDs. AID definitions will use the following syntax:

let ::= {A-Z,a-z,\_}

dig ::= {0-9}

AID\_field ::= (let (let | dig)\*)

Simple\_AID ::= (AID\_field [Simple\_AID] ) | #

Compound\_AID ::= Simple\_AID(-Simple\_AID)\*

The character "-" (dash) will be used as the Simple\_AID separator in compound AIDs.

If a Simple\_AID is <null>, the "#" character is used to specify a value of <null> for an AID\_field.

Groups of entities of the same type can be specified by using the value `all` or *someprefix* `all` in a Simple\_AID.

The legal places to use this value are specified in the appropriate commands below. The convention used in the command descriptions is that the value `all` is not allowed unless explicitly stated otherwise.

In general `all` is only allowed for input AIDs, i.e. when used in a TL1 request.

For the following requirements see also the definition of compound AIDs below.

The value `all` on bay and shelf level is only allowed for RTRV-EQPT on bay and shelf level. It is not allowed on this positions for entities further down in the hierarchy like slot, port, tributary.

### Example

valid: `all-all`

invalid: `all-all #-#-1-3-1`

The value `all` on the AID field for slot, CP, port or tributary is only allowed

- when it is the last AID field or
- when there is already an `all` on the AID field following the AID field.

**Example**

valid: 1-1-#-#-1-3-all

valid: 1-1-#-#-1-all

valid: 1-1-#-#-all-cp

valid: 1-1-#-#-1-all-all

invalid: 1-1-#-#-1-all-1



# System level AIDs

## Overview

---

**Purpose** This section contains all system level AIDs.

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## System AID

---

To identify the entire system the following AID is used:

SystemAID ::= system



## MDI/MDO

---

**General** The system has miscellaneous discrete outputs and inputs which are named without any hierarchical, positional information in the AID.

The system provides 8 input and 8 output miscellaneous discrete alarm points which can be assigned user-friendly names so that when the user wants to assert an output point, or receives an alarm from one of the input points, a name is used which reflects what the alarm point is physically connected to.

### **AIDs for MDIs, MDOs**

The following AIDs are used to identify the MDIs/MDOs:

Miscellaneous\_in\_discreteAID ::= misc\_in{1-8} | misc\_inall

Miscellaneous\_out\_discreteAID ::= misc\_out{1-8} | misc\_outall



## Timing

---

### AIDs for external timing references

The timing references can come from two external DS1 or E1 (2MHz or 2Mbit/s) or 64kbit/s (future) signals:

External\_timing\_ref\_AID ::= extref1 | extref2 | extrefall

In the system maximal 32 I/O slots are present. Every I/O slot can supply one timing reference signal extracted from the incoming data. Out of those six can be used as line timing input reference.

### AIDs for line timing references

The AIDs which can be used for the input selection are:

Line\_timing\_ref\_AID ::= line{1-6} | lineall

### AIDs for timing input ports

The system has two timing input ports. The AIDs for these timing input ports are:

External\_Timing\_input\_port\_AID ::= exttmg0 | exttmg1 | exttmgall

### AIDs for timing output ports

The system has two timing output ports. The AIDs for these timing output ports are:

External\_Timing\_output\_port\_AID ::= exttmg0\_out | exttmg1\_out | exttmg\_outall

### AID for timing output

The AID for timing output is

Timing\_Output\_AID ::= outtmg

For provisioning or retrieving information related to the system clock the SystemAID is to be used.



## OSI nodes

---

**AIDs for OSI nodes**    The system can support up to 8 OSI nodes, which are used to allow that the system is part in several routing domains.

The AIDs to access the OSI nodes are:

`OSI_node_AID ::= osinode{1-8} | osinodeall`



## General node

---

**General Node AID** The system supports a general node AID, which can be used to address any of the particular node AID types of above.

The general node AID is defined as:

Node\_AID ::= OSI\_node\_AID





# Hierarchically specified AIDs

## Overview

---

**Purpose** Below the system level AIDs, other entities are specified in a hierarchical structure.

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## Compound AID syntax overview

---

The AID structure defined for a compound AID is shown in the next table. For each AID Field further information is to be found in the subsequent subsections. Examples of compound AIDs can be found in “AID examples” (2-45).

| Entity                   | AID Field    |                   |                                    |              |                    |                                        |                                |
|--------------------------|--------------|-------------------|------------------------------------|--------------|--------------------|----------------------------------------|--------------------------------|
|                          | Bay/<br>Rack | Shelf/<br>Subrack | Prot Grp                           | Side<br>Line | Slot               | CP/<br>SPort/<br>EPort/<br>VCG/<br>NVM | STS-1/<br>AU-3/<br>VCG<br>Trib |
| Bay/<br>Rack             | 1            |                   |                                    |              |                    |                                        |                                |
| Shelf/<br>Sub-<br>rack   | 1            | 1                 |                                    |              |                    |                                        |                                |
| Protec-<br>tion<br>Group | 1            | 1                 | Simple_<br>Protection-<br>GroupAID |              |                    |                                        |                                |
| Fan<br>Unit              | 1            | 1                 | Simple_<br>FanAID                  |              |                    |                                        |                                |
| PI                       | 1            | 1                 | Simple_<br>PowerAID                |              |                    |                                        |                                |
| TI                       | 1            | 1                 | Simple_<br>TimingInter-<br>faceAID |              |                    |                                        |                                |
| Back-<br>plane           | 1            | 1                 | Simple_<br>BackplaneAID            |              |                    |                                        |                                |
| User<br>Panel            | 1            | 1                 | Simple_<br>UserPanelAID            |              |                    |                                        |                                |
| CI-CTL                   | 1            | 1                 | Simple_<br>CiCtlAID                |              |                    |                                        |                                |
| User<br>Byte<br>Ports    | 1            | 1                 | Simple_<br>UserBytePor-<br>tAID    |              |                    |                                        |                                |
| LAN<br>Ports             | 1            | 1                 | Simple_<br>LanPortAID              |              |                    |                                        |                                |
| Slot                     | 1            | 1                 | #                                  | #            | Simple_<br>SlotAID |                                        |                                |
| CP                       | 1            | 1                 | #                                  | #            | Simple_<br>SlotAID | cp                                     |                                |

| Entity                                 | AID Field    |                   |          |              |                    |                                        |                                 |
|----------------------------------------|--------------|-------------------|----------|--------------|--------------------|----------------------------------------|---------------------------------|
|                                        | Bay/<br>Rack | Shelf/<br>Subrack | Prot Grp | Side<br>Line | Slot               | CP/<br>SPort/<br>EPort/<br>VCG/<br>NVM | STS-1/<br>AU-3/<br>VCG<br>Trib  |
| NVM                                    | 1            | 1                 | #        | #            | {ctlwl<br>ctlp}    | nvm                                    |                                 |
| SPort                                  | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>SPortAID                    |                                 |
| EPort                                  | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>EPort-<br>tAID              |                                 |
| VCG                                    | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>VCGAID                      |                                 |
| STS-1/<br>AU-3<br>Trib                 | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>SPortAID                    | Simple_<br>STS1_<br>NumAID<br>* |
| STS-<br>3c/<br>AU-4<br>Trib            | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>SPortAID                    | Simple_<br>STS1_<br>NumAID<br>* |
| STS-<br>12c/<br>AU-4-4c<br>Trib        | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>SPortAID                    | Simple_<br>STS1_<br>NumAID<br>* |
| STS-<br>48c/<br>AU-4-<br>16c<br>Trib   | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>SPortAID                    | Simple_<br>STS1_<br>NumAID<br>* |
| STS-<br>192c/<br>AU-4-<br>64c<br>Trib  | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>SPortAID                    | Simple_<br>STS1_<br>NumAID<br>* |
| STS-<br>768c/<br>AU-4-<br>256c<br>Trib | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>SPortAID                    | Simple_<br>STS1_<br>NumAID<br>* |
| VCG<br>Trib                            | 1            | 1                 | #        | #            | Simple_<br>SlotAID | Simple_<br>VCGAID                      | Simple_<br>VCG<br>NumAID        |
| * See table below.                     |              |                   |          |              |                    |                                        |                                 |

The STS-3c/AU-4, STS-12c/AU-4-4c, STS-48c/AU-4-16c,  
STS-192c/AU4-64c, STS-768c/AU4-256c tributaries also use the

STS-1/AU-3 AID field. They are identified by the first STS-1/AU-3 number of the signal as indicated by the table below:

| Signal                       | MS2.5G/S3[-x] Adaptation (x in {3c, 12c, 48c}) | MS10G/S3[-x] Adaptation (x in {3c, 12c, 48c, 192c}) | MS40G/S3[-x] Adaptation (x in {3c, 12c, 48c, 192c, 768c}) |
|------------------------------|------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|
| S3 (STS-1/AU-3)              | 1, 2, 3, ..., 48                               | 1, 2, 3, ..., 192                                   | 1, 2, 3, ..., 768                                         |
| S3-3c (STS-3c/AU-4)          | 1, 4, 7, ..., 46                               | 1, 4, 7, ..., 190                                   | 1, 4, 7, ..., 766                                         |
| S3-12c (STS-12c/AU-4-4c)     | 1, 13, 25, 37                                  | 1, 13, 25, ..., 181                                 | 1, 13, 25, ..., 757                                       |
| S3-48c (STS-48c/AU-4-16c)    | 1                                              | 1, 49, 97, 145                                      | 1, 49, 97, ..., 721                                       |
| S3-192c (STS-192c/AU-4-64c)  | n/a                                            | 1                                                   | 1, 193, 385, 577                                          |
| S3-768c (STS-768c/AU-4-256c) | n/a                                            | n/a                                                 | 1                                                         |

**AID field lengths** The following table lists the AID field length specifications. The maximum length of an AID, including the separating –, must not exceed 23 characters:

| Field           | AID definitions                                   | Length (char) |
|-----------------|---------------------------------------------------|---------------|
| Bay (Rack)      | BayID                                             | 1             |
| Shelf (Subrack) | Simple_ShelfID                                    | 1             |
| Slot            | Simple_SlotAID                                    | 5             |
| CP              | Simple_CpAID   Simple_NvmAID                      | 3             |
| Socket          | Simple_SocketAID                                  | 5             |
| Optical Module  | Simple_OmAID                                      | 3             |
| Port            | Simple_SPortAID   Simple_EPortAID   Simple_VCGAID | 2             |
| Trib            | Simple_STS1NumAID   Simple_VCGNumAID              | 3             |



## Range specifications

---

Various TL1 commands allow for the specification of a range of entities as input parameters. These ranges are specified in the AID definitions in this document which allow the use of the term all in one or more AID Fields within a Simple\_AID. Details of where these values are allowed is detailed in the AID parameter description per command.



The following graphics show the physical layout of the dual unit row (DUR) subrack (frontside) and the naming conventions:

|    |   |    |    |    |   |    |    |        |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |     |     |      |      |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|    |   |    |    |    |   |    |    | USRPNL |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |     |     |      |      |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 01 | 1 | 21 | 21 | 02 | 2 | 22 | 22 | 03     | 3 | 23 | 23 | 04 | 4 | 24 | 24 | 05 | 5 | 25 | 25 | 06 | 6 | 26 | 26 | 07 | 7 | 27 | 27 | 08 | 8 | 28 | 28 | XCW | XCP | CTLW | CTLP | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|    |   |    |    |    |   |    |    |        |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |    |     |     |      |      |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|                                  |        |        |        |     |        |        |        |        |        |
|----------------------------------|--------|--------|--------|-----|--------|--------|--------|--------|--------|
| FAN                              |        |        |        |     |        |        |        |        |        |
| ECI 61                           | ECI 63 | ECI 65 | ECI 67 | TIA | TIB    | ECI 72 | ECI 74 | ECI 76 | ECI 78 |
| 61                               | 63     | 65     | 67     | 69  | 70     | 72     | 74     | 76     | 78     |
| ECI 41                           | ECI 43 | PI A   | CICLT  | 51  | ECI 52 | ECI 54 | PI B   |        |        |
| 41                               | 43     |        |        |     | 45     | 52     |        | 54     | 56     |
| Air Filter Tray                  |        |        |        |     |        |        |        |        |        |
| Viewed "through the backplane" ! |        |        |        |     |        |        |        |        |        |



## Bay (rack) and shelf (subrack)

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The *LambdaUnite*<sup>®</sup> MSS system uses a single unit row (SUR) subrack in the REG40 configuration or a dual unit row (DUR) subrack in the LXC40 configuration.

Up to two DUR, three SUR or combinations 2 SUR/1DUR, 1SUR/1DUR fit into one rack (bay). From the AID definition this relationship will not become visible.

**AID for bay (rack)** The BayAID is used to identify the rack (bay) of the system:

BayAID ::= 1 | all

**AID for shelf (subrack)** The ShelfAID is used to identify the subrack type (shelf):

Simple\_ShelfAID ::= 1 | all

ShelfAID ::= BayAID–Simple\_ShelfAID

Note: Different configurations will be distinguished by a the parameter *shlftp* in RTRV-EQPT for subrack (shelf).





## Fans

---

**AIDs for fan**    There is one fan unit in the system. The FanAID is used to identify the fan unit in the subrack:

Simple\_FanAID ::= fan | fanall

FanAID ::= BayAID–Simple\_ShelfAID–Simple\_FanID



## Power interface

---

**AIDs for power interfaces**    There are two power interface units PI(A) and PI(B) in the subrack, which are located at the rear side. The PowerAID is used to identify the power interface in the subrack:

Simple\_PowerAID ::= pia | pib | piall

PowerAID ::= BayAID–Simple\_ShelfAID–Simple\_PowerAID



## Backplane

---

**AID for backplane**

The subrack has a backplane with an inventory EEPROM. The BackplaneAID is used to identify the backplane in the subrack:

Simple\_BackplaneAID ::= backp1

BackplaneAID ::= BayAID–Simple\_ShelfAID–Simple\_BackplaneAID

□

## User panel

---

**AID for user panel**    There is one user panel in the subrack. The UserPanelAID is used to identify the user panel in the system:

Simple\_UserPanelAID ::= usrpn1

UserPanelAID ::= BayAID–Simple\_ShelfAID–Simple\_UserPanelAID



## CI-CTL

---

**AID for CI-CTL**    The system has a connection interface with e.g. LAN and user byte ports (CI-CTL). The CiCtlAID is used to identify the CI-CTL in the subrack:

Simple\_CiCtlAID ::= cictl

CiCtlAID ::= BayAID–Simple\_ShelfAID–Simple\_CiCtlAID



## User byte ports

---

**AIDs for user byte ports**    The system has six ports to access user bytes which are located on the CI-CTL. The UserBytePortAID is used to identify a user byte port in the subrack:

Simple\_UserBytePortAID ::= ubio1 | ubio2 | ubio3 | ubio4 | ubio5 |  
ubio6 | ubioall

UserBytePortAID ::=  
BayAID–Simple\_ShelfAID–Simple\_UserBytePortAID



## LAN ports

---

**AIDs for LAN ports**

The system has four LAN ports which are located on the UPL (LAN1) and CI-CTL (LAN2, LAN3). A LAN4 is currently only HW prepared and has no further functionality. The LanPortAID is used to identify a LAN port in the subrack:

$\text{Simple\_LanPortAID} ::= \text{lan1} \mid \text{lan2} \mid \text{lan3} \mid \text{lan4}$

$\text{LanPortAID} ::= \text{BayAID} - \text{Simple\_ShelfAID} - \text{Simple\_LanPortAID}$



## Timing interfaces (TI)

---

### AIDs for timing interfaces

The system has up to two timing interfaces TI(A) and TI(B) located on the rear side of the subrack. The TimingInterfaceAID is used to identify a timing interface in the subrack:

Simple\_TimingInterfaceAID ::= tia | tib | tia11

TimingInterfaceAID ::= BayAID–Simple\_ShelfAID–Simple\_TimingInterfaceAID

### Electrical Connector Interface (ECI)

The system has up to 12 electrical connector interfaces (ECI) located on the rear side of the subrack. Note: Only the upper shelf row can be used for EP155 configurations.

AIDs for electrical connector interfaces:

The EciAID shall be used to identify a electrical connector interface in the subrack:

Simple\_EciAID ::= eci61 | eci63 | eci65 | eci67 | eci72 | eci74 | eci76 | eci78 | ecia11

EciAID ::= BayAID–Simple\_ShelfAID–Simple\_EciAID





## Slot

---

The *LambdaUnite*<sup>®</sup> MSS in a DUR subrack has in total two rows of circuit packs as shown in figure in “Frontside” (2-19). The slots for the cross connect pack (XC) and for the controller pack (CTL) are distinguished from the universal slots (US). The postfix P(rotection) or W(orking) for the XC and CTL indicates its role in the 1+1 equipment protection relationship.

### AIDs for universal slots

The UnivSlotAID is used to identify a universal slot in the system:

Simple\_UnivSlotAID ::= {1 ... 8, 12 ... 19, 21 ... 28, 32 ... 39} |  
usa11 | a11

UnivSlotAID ::=

BayAID–Simple\_ShelfAID–#–#–Simple\_UnivSlotAID

Note: The us-prefix and leading zeroes have to be removed from Simple\_UnivSlotAID. This change is not reflected in all examples below.

Note: The value “a11” was added as an additional option to iterate over all slots not considering the type of slot.

### AIDs for cross-connect slots

The XCSlotAID is used to identify a slot useable for an XC circuit pack in the system:

Simple\_XCSlotAID ::= xcp | xcw | xca11 | a11

XCSlotAID ::= BayAID–Simple\_ShelfAID–#–#–Simple\_XCSlotAID

Note: The value “a11” was added as an additional option to iterate over all slots not considering the type of slot.

### AIDs for controller slots

The CTLSlotAID is used to identify a slot useable for a CTL circuit pack in the system:

Simple\_CTLSlotAID ::= ctlp | ctlw | ctla11 | a11

CTLSlotAID ::=

BayAID–Simple\_ShelfAID–#–#–Simple\_CTLSlotAID

Note: The value “a11” was added as an additional option to iterate over all slots not considering the type of slot.

**AIDs for slots**

The SlotAID is used to identify a slot in the system:

Simple\_SlotAID ::= Simple\_UnivSlotAID | Simple\_XCSlotAID |  
Simple\_CTLSlotAID | all

SlotAID ::= BayAID–Simple\_ShelfAID–#–#–Simple\_SlotAID

The “#” in the SlotAID were used in the CG to identify protection group information for ports and tributaries. This addressing scheme is not supported.

**OP40G slot restrictions**

Since the OP40 is four slot wide, only the following Simple\_UnivSlotAIDs are allowed:

Simple\_SlotAIDOP40 ::= { 4, 8, 15, 19, 24, 28, 35, 39 }

SlotAIDOP40 ::=

BayAID–Simple\_ShelfAID–#–#–Simple\_SlotAIDOP40



## Circuit pack

---

**AIDs for circuit packs**    cp can be used in the port field to identify a circuit pack:

Simple\_CpAID ::= cp

CpAID ::= SlotAID-cp



## Socket

---

Circuit packs may contain sockets where pluggable interfaces can be plugged in.

### AIDs for sockets

The Simple\_SocketAID shall be used in the port field to identify a socket contained on a circuit pack which is inserted in a slot.

Simple\_SocketAID ::= sc1 | sc2 | sc3 | sc4 | sc5 | sc6 | sc7  
| sc8 | scall

SocketAID ::= BayAID-Simple\_ShelfAID-#-#-Simple\_UnivSlotAID-  
Simple\_SocketAID

Legal Simple\_SocketAIDs depend of the CP provisioned for the slot. The system supports only a one to one relation between sockets and ports. Example: port no. 1 (1-1-#-#-1-1) is related to a socket no.1 (1-1-#-#-1-sc1).



## SDH/SONET port

### AIDs for SDH/SONET ports

The SPortAID is used to identify SDH/SONET ports in the system:

Simple\_SPortAID ::= 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | all

SPortAID ::= UnivSlotAID–Simple\_SPortAID

Legal Simple\_SPortAIDs depend on the type of CP provisioned for the slot as shown in the following table:

| Functional Name | Legal Port AIDs                                               | Restrictions                              |
|-----------------|---------------------------------------------------------------|-------------------------------------------|
| EP155           | {1, 2, 3, 4, 5, 6, 7, 8}   all                                | none - valid for all supported qualifiers |
| OP155           | {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16}   all | none - valid for all supported qualifiers |
| OP622           | {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16}   all | none - valid for all supported qualifiers |
| OPLB            | {1, 2, 3, 4, 5, 6, 7, 8}   all                                | none - valid for all supported qualifiers |
| OP2G5           | {1, 3}   all                                                  | qualifier = PARENT                        |
| OP2G5           | {1, 2, 3, 4}   all                                            | qualifier != PARENT                       |
| OP2G5D          | {1, 2, 3, 4, 5, 6, 7, 8}   all                                | none - valid for all supported qualifiers |
| OP10G           | 1   all                                                       | none - valid for all supported qualifiers |
| OP10D           | {1, 2}   all                                                  | none - valid for all supported qualifiers |
| OP40G           | 1   all                                                       | none - valid for all supported qualifiers |

The table above does not take into account the release information when a certain pack is supported.

The number of legal port AIDs shown in the table above does not necessarily reflect the capabilities of the actual circuit pack w.r.t. port numbers. Additional rows are added for the packs if they differ in

terms of port numbers. The functional qualifier is then used as  
identification criteria - see restriction column.



# GbE port

**AIDs for gigabit Ethernet ports**

The EPortAID can be used to identify gigabit Ethernet ports in the system:

Simple\_EPortAID ::= 1 | 2 | 3 | 4 | all

EPortAID ::= UnivSlotAID-EPortAID

Legal Simple\_EPortAIDs depend on the type of CP provisioned for the slot as shown in the following table:

| Circuit Pack Type | Legal Port AIDs      |
|-------------------|----------------------|
| GE1               | { 1, 2, 3, 4 }   all |



# Virtual concatenation group (VCG)

---

Virtual concatenation groups (VCG) represent the interface between the Ethernet Switch and the Ethernet over SDH/SONET function. Sometimes they are also denoted as WAN ports.

**AIDs for VCG**    The VCGAID can be used to identify VCG ports in the system:

Simple\_VCGAID ::= v1 | v2 | v3 | v4 | va11

VCGAID ::= UnivSlotAID–Simple\_VCGAID

Legal VCG AIDs depend on the type of CP provisioned for the slot as shown in the following table:

| Circuit Pack Type | Legal VCG Port AIDs     |
|-------------------|-------------------------|
| GE1               | {v1, v2, v3, v4}   va11 |





## AU-3/STS-1 tributary

---

### AIDs for AU-3/STS-1 tributaries

The STS1NumAID can be used to identify SDH/SONET tributaries in the system:

$\text{Simple\_STS1NumAID} ::= \{ 1, 2, \dots, 768 \} \mid \text{all}$

$\text{STS1NumAID} ::= \text{SPortAID} - \text{Simple\_STS1NumAID}$

Legal Simple\_STS1NumAIDs (STS-1/AU-3 numbers) depend on the type of CP provisioned for the slot and may depend on the provisioned pluggable interface as shown in the following table:

| Circuit Pack Type | Legal STS-1/AU-3 Number |
|-------------------|-------------------------|
| EP155             | { 1 ... 3 }             |
| OP155             | { 1 ... 3 }             |
| OP622             | { 1 ... 12 }            |
| OP2G5             | { 1 ... 48 }            |
| OP10              | { 1 ... 192 }           |
| OP40              | { 1 ... 768 }           |



## Virtual concatenation group (VCG) tributary

**AIDs for VCG tributaries**

The VCGNumAID can be used to identify VCG tributaries in the system:

Simple\_VCGNumAID ::= { 1, ..., 21 } | all

VCGNumAID ::= VCGAID-Simple\_VCGNumAID

VCG tributaries denote a group of X virtually concatenated STSs/VCs:

STS-1-Xv (X in {1, ..., 21} or VC-4-Xv (X in {1, ..., 7})).

Legal Simple\_VCGNumAIDs (VCG numbers) depend on the type of CP provisioned for the slot and the VCG type (mapping) as shown in the following table:

| Circuit Pack Type / VCG mapping | Legal VCG Number          |
|---------------------------------|---------------------------|
| GE1/STS1-VC3                    | {1 ... 21}                |
| GE1/STS3c-VC4                   | {1, 4, 7, 10, 13, 16, 19} |

The actual value is also dependent on the actual configuration.



## Generic tributary

---

### AIDs for generic tributaries

In some scenarios the specific tributary type is not of interest. The GenTribAID is used to identify generic tributaries in the system:

Simple\_GenTribAID ::= Simple\_STS1NumAID | Simple\_VCGNumAID | all

Simple\_GenTribPortAID ::= Simple\_SPortAID | Simple\_VCGAID | all

GenTribAID ::=

BayAID–Simple\_ShelfAID–#–#–Simple\_UnivSlotAID–

Simple\_GenTribPortAID–Simple\_GenTribAID



## Protection groups

---

### Simple protection group AID

The system supports equipment and transmission protection. The ProtGrpAID can be used to identify equipment and transmission protection groups:

Simple\_ProtGrpAID ::= eEquipmentProtGrpID | ea111 {o1n1t1f}  
TransProtGrpID | oa111 | na111 | ta111 | fa111 | a11

ProtGrpAID ::= BayAID–Simple\_ShelfAID–Simple\_ProtGrpAID

The first character in the Simple\_ProtGrpAID is denoted as **entity type qualifier**. It determines the type of protection as described in the following table:

| Entity Type Qualifier | Protection Type                                |
|-----------------------|------------------------------------------------|
| e (quipment)          | 1+1 or 1:1 (future) equipment protection group |
| o (ne plus one)       | 1+1 linear MSP/APS                             |
| n ( by one)           | 1:n linear MSP/APS (including 1:1) – future    |
| t (wo fibre)          | 2 fibre MS SPRING / BLSR                       |
| f (our fibre)         | 4 fibre MS SPRING / BLSR                       |

The *EquipmentProtGrpID* is described in the following subsections.

### Transmission protection group ID

The *TransProtGrpID* is a three digit identifier which will be assigned to the group when it is created by the user:

TransProtGrpID ::= { 001, ..., 999 }

### Types of transmission protection AIDs

The following types of transmission protection AIDs are defined according to the rules above:

OnePlusOne\_ProtGrpAID ::=

BayAID–Simple\_ShelfAID–oTransProtGrpID | BayAID–Simple\_ShelfAID–oa11

NByOne\_ProtGrpAID ::=

BayAID–Simple\_ShelfAID–nTransProtGrpID | BayAID–Simple\_ShelfAID–na11

TwoFibre\_ProtGrpAID ::=

BayAID-Simple\_ShelfAID-tTransProtGrpID | BayAID-Simple\_  
ShelfAID-tall

FourFibre\_ProtGrpAID ::=

BayAID-Simple\_ShelfAID-fTransProtGrpID | BayAID-Simple\_  
ShelfAID-fall

**Path protection group AIDs**

The output tributary AID of the associated protected cross-connection is used to identify a path protection group AID.



## Switch and timing equipment protection group

---

**AID for switch and timing  
equipment group**

The system can have a 1+1 equipment protection group for the XC320 CP which implements the switch and timing function. The SwitchAndTmgProtGrpAID can be used to identify the 1+1 equipment protection group for the XC320:

Simple\_SwitchAndTmgProtGrpAID ::= estgrp

SwitchAndTmgProtGrpAID ::= BayAID–Simple\_ShelfAID–estgrp



## Controller equipment protection group

---

**AID for controller equipment group**

The system can have a 1+1 equipment protection group for the CTL CP which implements the system controller function (SCF) and data communications function (DCF). The CtlProtGrpAID can be used to identify the 1+1 equipment protection group for the CTL:

Simple\_CtlProtGroupAID ::= ectlgrp

CtlProtGroupAID ::= BayAID-Simple\_ShelfAID-ectlgrp



## General equipment protection groups

---

**Equipment Protection  
Group ID**

The EquipProtGrpID is a three digit identifier which shall be assigned to the group when it is created by the user:

EquipProtGrpID ::= { 01, ..., 99 }

**AID for EP155 equipment  
group**

The EP155ProtGrpAID shall be used to identify the 1+1 equipment protection group for the EP155:

Simple\_EP155ProtGroupAID ::= eepEquipProtGrpID

EP155ProtGroupAID ::= BayAID-Simple\_ShelfAID-eepEquipProtGrpID

□



## Examples

---

**AID examples** The following tables gives examples for the various AIDs described in the previous sections:

| Entity                                                  | Example AID      |
|---------------------------------------------------------|------------------|
| Bay / Rack                                              | 1                |
| Shelf / Subrack                                         | 1-1              |
| Equipment protection group (Switch and Timing Function) | 1-1-estgrp       |
| 1+1 MSP / APS protection group                          | 1-1-o100         |
| Two Fiber MSSPRING/BLSR protection group                | 1-1-t110         |
| Fan Unit                                                | 1-1-fan          |
| PI                                                      | 1-1-pia          |
| TI                                                      | 1-1-tia          |
| Backplane                                               | 1-1-backpl       |
| User Panel                                              | 1-1-usrpn1       |
| CI-CTL                                                  | 1-1-cictl        |
| User Byte Port                                          | 1-1-ubio3        |
| LAN Ports                                               | 1-1-lan2         |
| Slot                                                    | 1-1-#-#-2        |
| CP                                                      | 1-1-#-#-xcw-cp   |
| Socket                                                  | 1-1-#-#-5-sc2    |
| NVM                                                     | 1-1-#-#-ctlw-nvm |
| SPort                                                   | 1-1-#-#-1-3      |
| EPort                                                   | 1-1-#-#-2-1      |
| VCG Port                                                | 1-1-#-#-2-v1     |
| STS-1 / AU-3 Trib                                       | 1-1-#-#-1-3-1    |
| VCG Trib                                                | 1-1-#-#-2-v1-1   |







## 3 Common data types

### Overview

---

**Purpose** The following data types are used in the description of TL1 messages, the definition is given in Backus-Naur Form (characters of the Backus-Naur Form are enclosed in " " when they are meant as literal in the definition):



# Conventions used in message descriptions

| GR-831-CORE Definition | Name used in TL1 messages | Definition                                                                                                                |
|------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------|
| nil                    | nil                       | nil, symbolizes the absence of any other thing                                                                            |
| let                    | letter                    | A   B   ...   Z   a   b   ...   z                                                                                         |
| dig                    | digit                     | 0   1   2   3   4   5   6   7   8   9                                                                                     |
| ident                  | identifier                | <letter> ( <letter>   <digit> ) *                                                                                         |
| sym name               | symbolic name             | <digit>* (( <letter>   "+"   #   % ) <digit>*)+                                                                           |
| alphanum               | alphanumeric string       | ( <letter>   <digit> ) +                                                                                                  |
| dec num                | decimal number            | [D"]<digit>* [.] <digit>+                                                                                                 |
| arith exp              | arithmetic expression     | "( " [ "+"   - ] <digit>*[.]<digit>+ ")"                                                                                  |
| hex num                | hexadecimal number        | [H"] (<digit>   A   B   C   D   E   F )+                                                                                  |
| oct num                | octal number              | [O"] ( 0   1   2   3   4   5   6   7 )+                                                                                   |
| bin num                | binary number             | [B"] ( 0   1 )+                                                                                                           |
| keyed num              | keyed number              | [K"] ( <digit>   A   B   C   D   "*"   # )+                                                                               |
| num str                | numeric string            | <digit>+                                                                                                                  |
| integer                | integer                   | <numeric string>   "(" [ "+"   - ] <digit>+ ")"                                                                           |
| text str               | text string               | "( \ "   \ \   <any character except " or \>)* "                                                                          |
| inner str              | inner string              | \ " ( " "   \ \   <any character except " or \>)* \ "                                                                     |
| aid                    | AID                       | see Chapter 2, "AID structure".                                                                                           |
|                        | AID list                  | <AID> (&<AID>)*                                                                                                           |
| tid                    | TID                       | <identifier>(-<identifier>)* <text string> see also RTRV-HDR for <i>LambdaUnite</i> <sup>®</sup> MSS specific constraints |
|                        | character string          | any character except: ; , : "                                                                                             |
|                        | value set                 | set of predefined <character strings>                                                                                     |
|                        | alphanumeric value set    | set of predefined <alphanumeric strings>                                                                                  |
|                        | numeric value set         | set of predefined <numeric strings>                                                                                       |
|                        | AID string                | (letter   digit   _   -   &   # )+                                                                                        |





# 4 Tl1 messages - administration & security

## Overview

---

**Purpose** This section contains the TL1 interface definition for the domain “administration and security”.

### Contents

|                                        |                      |
|----------------------------------------|----------------------|
| <b>Session</b>                         | <a href="#">4-3</a>  |
| ACT-USER: Activate user                | <a href="#">4-4</a>  |
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| CANC-USER-SECU: Cancel user security   | <a href="#">4-13</a> |
| <b>NE security administration</b>      | <a href="#">4-16</a> |
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| RTRV-USER-SECU: Retrieve user security | <a href="#">4-24</a> |
| RTRV-USER: Retrieve user               | <a href="#">4-30</a> |
| ENT-USER-SECU: Enter user security     | <a href="#">4-32</a> |
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| ED-USER-SECU: Edit user security       | <a href="#">4-39</a> |
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|                                     |                      |
|-------------------------------------|----------------------|
| ED-USER: Edit user                  | 4-46                 |
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| ED-PID notification                 | <a href="#">4-53</a> |
| DLT-USER-SECU: Delete user security | <a href="#">4-54</a> |
| DLT-USER-SECU notification          | <a href="#">4-57</a> |

# Session

## Overview

---

**Purpose** The session entity handles the establishment and removal of sessions between the NE and the Managers.

**Contents**

|                                      |                      |
|--------------------------------------|----------------------|
| ACT-USER: Activate user              | <a href="#">4-4</a>  |
| CANC-USER: Cancel user               | <a href="#">4-11</a> |
| CANC-USER-SECU: Cancel user security | <a href="#">4-13</a> |



## ACT-USER: Activate user

---

The ACT-USER command must be initiated to set up a login session with the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): Any  
 Priority: 4  
 Abortable: No

**Input format** Command Syntax: ACT-USER:*tid:uid:ctag::pid*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
 See definition of “RTRV-HDR: Retrieve header” (5-8).
2. **uid** – User Identifier  
 This is the unique user login identifier for which the ACT-USER login command is intended. Grouping and/or ranging of **uid** values for the ACT-USER command are not allowed. Valid **uid** values for the ACT-USER command are case-sensitive alphanumeric strings which have been previously provisioned as valid login IDs in the NE.  
 Type: alphanumeric string (case-sensitive)  
 Range: 1 – 10 characters  
 The **uid** ALL is not allowed in any combination of upper or lower cases.  
 Default: not applicable
3. **ctag** – Correlation Tag  
 See definition of “RTRV-HDR: Retrieve header” (5-8).
4. **pid** – Password Identifier  
 This required parameter is the confidential password authenticator for the given **uid**. Password strings are transmitted in non-encrypted form in the ACT-USER command; are encrypted when stored in the NE; and are never transmitted from the NE.  
 Type: character string (case-sensitive)  
 Range: 6 to 10 legal characters. Valid passwords consist of at least two non-alphabetic characters with at least one special character. The special character can be one of the required



non-alpha characters. For example, TEST1+ is a valid password.  
The first character of a password must be a letter.  
Default: For the two superusers the default password is:  
UNITE+01 for User ID LUC01 and UNITE+02 for User ID  
LUC02. For other users: not applicable.

**Output format** When a user logs in successfully, the following response is returned:

```
sid date time
M ctag COMPLD
"uid:lastdate,lasttime,attempts,systype,release,
upc:spec_block"
/* Lucent Technologies systype Release release
User Privilege Code: upc
LUCENT TECHNOLOGIES - PROPRIETARY
THIS SOFTWARE CONTAINS INFORMATION OF LUCENT
TECHNOLOGIES AND IS NOT TO BE DISCLOSED OR USED
EXCEPT IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.
USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY
AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN
LUCENT TECHNOLOGIES AND CUSTOMER.
UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
*/
;
```

Note: A blank line in front of the terminator (;) can be ignored.

Expired password:

If the login request would otherwise complete successfully, but the user password has expired or it is the first login, the following partial completion response is returned:

```
sid date time
M ctag PRTL
"uid:lastdate,lasttime,attempts"
/* Your password has expired. Until you change your
password (ED-PID)
you will not be allowed further access to this
Network Element.
*/
;
```

Advance notice of password expiration:

If the user password is about to expire, the following line is added at the bottom of the login banner, where 'x' is a number from 1 to 5:

```
...  
Your password will expire in x days.  
*/  
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section for the RTRV-HDR command.

## Output parameters

### Command parameters

1. uid – User Identifier  
This is included in the command by the OS/CIT and repeated by the NE as a confirmation that the given user identifier is successfully logged in.
2. lastdate – Last uid Login Date  
This is the date of the last session established by this *uid*.  
Type: value set of the format YY-MM-DD  
Range: Y, M, D are digits. Leading zeros are not suppressed. YY represents the last two digits of the year, MM the month, DD the day.
3. lasttime – Last uid Login Time  
This is the time of the last session established by this *uid*.  
Type: value set of the format HH-MM-SS  
Range: H, M, S are digits. Leading zeros are not suppressed. HH represents the hours, MM the minutes, SS the seconds. The 24 hour format is used.
4. attempts – Unsuccessful Login Attempts  
This is the number of unsuccessful login attempts since the last successful login session on this NE.  
Type: integer  
Range: 0 – 98

ACT-USER: Activate user

5. systype – System Type  
This specifies the type of system.  
Type: value set  
Range: WaveStar\_UNITE  
Default: WaveStar\_UNITE
6. release – Release  
This is the software Release number of the system.  
Type: value set in the form xx.yy.zz  
Range: x, y, z are digits. Leading zeros are not suppressed. The version number ranges from 01.00.00 ... 99.99.99  
Example: 01.02.03  
Default: 01.00.00
7. upc – User Privilege Code List  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).

**Spec block parameters**

1. tmleft – Time left before password expires  
If there are more than 5 days left before the password expires, this parameter is omitted.  
Type: integer  
Range: 1 ... 5

**Detailed behavior description**

An active TL1 access login session is required at each NE in order to interact with that NE (including receiving autonomous message output as well as using TL1 commands).

A maximum of one login per active session is allowed. Any subsequent attempt on the same session is denied. But the user can login several times on different sessions.

Until a successful login attempt is complete for a given NE, there is no communication (autonomous or command responses) outbound from the NE except to DENY unsuccessful login attempts.

If a user password has expired upon execution of the ACT-USER command, the ACT-USER will be accepted but that user will not be able to perform any function or receive any autonomous message output until the associated password has successfully been modified. This will also occur if the user logs in the first time.

A special banner message will be displayed as part of the command completion response, informing the user that the password has expired

ACT-USER: Activate user

and must be updated (see the OUTPUT FORMAT section). The user is allowed to use either ED-PID to update the password identifier or CANC-USER to terminate the session.

When the NE receives an ACT-USER command, the given login ID will initiate a login session on the NE provided that a provisioned login ID and correct password are entered.

When the communication with the NE fails, all active logins to that NE are terminated without notice to the user. Similarly, all active logins to a targeted NE are terminated if a communication failure occurs between the local NE and that remote NE or if an intermediate NE is reset or initialized.

The ACT-USER command does not generate a REPT DBCHG message.

#### Example input/output

The following example shows a successful login session initiation attempt:

```
ACT-USER:LT-UNITE-123:nbguser1:123456::kj5lee+3;
    LT-UNITE-123 01-01-01 08:00:00
M 123456 COMPLD
    "nbguser1:00-12-31,09-00-00,1,WaveStar_UNITE,1.1.13,
    P3&M3:tmleft=5"
    /* Lucent Technologies WaveStar_UNITE Release 1.1.13
    User Privilege Code: P3&M3
    LUCENT TECHNOLOGIES - PROPRIETARY
    THIS SOFTWARE CONTAINS INFORMATION OF LUCENT
    TECHNOLOGIES
    AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE
    WITH APPLICABLE AGREEMENTS.
    NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.
    USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY
    AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN
    LUCENT TECHNOLOGIES AND CUSTOMER.
    UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
    */
;
```

The following example shows a partial completion response to a login session initiation attempt:

```
ACT-USER:LT-UNITE-123:nbguser1:123456::kj5lee+3;
    LT-UNITE-123 01-01-01 08:00:00
```

```
M 123456 PRTL
"nbguser1:00-12-31,09-00-00,23"
/* Your password has expired. Until you change your
password (ED-PID)
you will not be allowed further access to this Network
Element */
;
```

Note: A blank line in front of the terminator ";" can be ignored.

**Error responses** The general error responses defined in "RTRV-HDR: Retrieve header" (5-8) are also valid for this command.

**Validation rule: Maximum logins exceeded**

If a user attempts to login after the maximum number of login sessions has been reached, the following error message will be displayed.

Error code: SARB - Status, All Resources Busy

**Validation rule: Invalid uid and/or pid**

If the NE receives an ACT-USER command with an invalid *uid* (*uid* not in the NE database or *uid* syntactically incorrect), invalid *pid* or both.

Error code: IDNV - Input, Data Not Valid

**Validation rule: Disabled User ID**

If a user attempts to log in using a disabled User ID, the login is denied and the following error message will be displayed:

Error code: IDNV - Input, Data Not Valid

**Validation rule: Expired password and unsuccessful change of password**

The user will be allowed three attempts to change their password. If the third attempt fails, the user will be logged out and the association dropped. The execution of any command prior to the successful change of the password will be counted as one of the three attempts to change the password. This includes failures of the ED-PID command due to incorrect data, attempts to execute valid commands other than the ED-PID command, or invalid commands, possibly due to a data entry error. In all cases, the system will return the following error response.

Error code: IDNV - Input, Data Not Valid

ACT-USER: Activate user

**Validation rule: Login on established session**

If the system receives an ACT-USER command on an already established session the system responds with the following error response:

Error code: ICNV - Input, Command Not Valid, session already established

**Related TL1 messages**

- “CANC-USER: Cancel user” (4-11)
- “CANC-USER-SECU: Cancel user security” (4-13)
- “ED-PID: Edit password identifier” (4-49)
- “DLT-USER-SECU: Delete user security” (4-54)
- “ED-USER-SECU: Edit user security” (4-39)
- “ENT-USER-SECU: Enter user security” (4-32)
- “RTRV-USER-SECU: Retrieve user security” (4-24)
- “RTRV-PRMTR-SFTWR: Retrieve parameter software” (11-13)

**References** TR-NWT-000835, OTGR Section 12.5: Operations Applications Messages – NE and Network System Security Administration Messages.



## CANC-USER: Cancel user

---

The CANC-USER command can be initiated to terminate the login session of the user with the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): Any  
 Priority: 1  
 Abortable: No

**Input format** Command Syntax: CANC-USER:*tid*:*uid*:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *uid* – User Identifier  
 This is the user identifier that was used in the ACT-USER command that initiated this session. This is an optional parameter; if it is not specified, it defaults to the user identifier of this session. See definition of “ACT-USER: Activate user” (4-4). The *uid* is not really needed in this command, because always the own session will be canceled. But this parameter is in because of telcordia requirements.
3. *ctag* – Correlation Tag  
 See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** If the logout request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## CANC-USER: Cancel user

**Detailed behavior description**

When the NE receives a CANC-USER command, the login session on the NE will be terminated provided that the user is currently active on the NE. Only the users own session can be terminated.

The CANC-USER command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows a successful command completion and login session termination:

```
CANC-USER:LT-UNITE-123::123456;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Validation rule: not the own uid specified**

Only the own *uid* must be specified. There is not so.

Error code: IDNC - Input, Data, Not Consistent, not own uid

**Related TL1 messages**

- “ACT-USER: Activate user” (4-4)
- “CANC-USER-SECU: Cancel user security” (4-13)
- “DLT-USER-SECU: Delete user security” (4-54)
- “ED-USER-SECU: Edit user security” (4-39)
- “ENT-USER-SECU: Enter user security” (4-32)
- “RTRV-USER-SECU: Retrieve user security” (4-24)

**References**

TR-NWT-000835, OTGR Section 12.5: Operations Applications Messages – NE and Network System Security Administration Messages.





## CANC-USER-SECU: Cancel user security

---

The execution of this command on a NE by an security administrator terminates all login sessions of a particular user or of all non-superusers/non-MEMADMIN-users within the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S5  
 Priority: 1  
 Abortable: No

**Input format** Command Syntax: CANC-USER-SECU:*tid*:*[uid]*:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *uid* – User Identifier  
 This is the *uid* of the user whose sessions are being terminated. If an security administrator wants to force log out another user, then the security administrator could do so by specifying that *uid*. An privileged user could log out any other user including super-users and users of *uidclass* MEMADMIN.  
 If an security administrator wants to force log out all the users that are currently logged in, then the security administrator could do so by omitting the *uid*. Logging out all users by omitting the *uid* does not include the super-users or MEMADMIN-users logins.
3. *ctag* – Correlation Tag  
 See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** If the logout request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

CANC-USER-SECU: Cancel user security

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The CANC-USER-SECU command can be only executed by the security administrator (UPC S5). She/he can terminate the sessions of other users by supplying his/her *uid*. If a user has established more than one sessions then all sessions will be terminated. The own session will not be affected this command.

The CANC-USER-SECU command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows a successful command completion and login session termination:

```
CANC-USER-SECU:LT-UNITE-123:nbguser1:123456;
      LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
;
```

**Error responses**

The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Validation rule: uid not in NE data base**

The *uid* is not contained in the NE’s data base.

Error code: IDNV - Input, Data Not Valid, uid not in NE data base

**Validation rule: user with uid not logged in**

A user with the specified *uid* is not currently logged in.

Error code: SRQN - Status, invalid request, uid not logged in

**Validation rule: uid must not be the own uid**

If the own uid matches *uid* the command should be denied.

Error code: IDNV - Input, Data Not Valid, uid must not be the own uid.

CANC-USER-SECU: Cancel user security

### Related TL1 messages

- “ACT-USER: Activate user” (4-4)
- “CANC-USER: Cancel user” (4-11)
- “DLT-USER-SECU: Delete user security” (4-54)
- “ED-NE-SECU: Edit NE security” (4-20)
- “ED-USER-SECU: Edit user security” (4-39)
- “ENT-USER-SECU: Enter user security” (4-32)

**References** TR-NWT-000835, OTGR Section 12.5: Operations Applications Messages – NE and Network System Security Administration Messages.



# NE security administration

## Overview

---

**Purpose** This entity refers to the NE security parameters which are defined for the whole NE.

**Contents**

|                                    |                      |
|------------------------------------|----------------------|
| RTRV-NE-SECU: Retrieve NE security | <a href="#">4-17</a> |
| ED-NE-SECU: Edit NE security       | <a href="#">4-20</a> |
| ED-NE-SECU notification            | <a href="#">4-22</a> |



## RTRV-NE-SECU: Retrieve NE security

---

The RTRV-NE-SECU command can be initiated by a user to retrieve global security information in the NE. The current login sessions in the NE identified by the *uid* which established the session will also be retrieved using the RTRV-NE-SECU command.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: No

**Input format** Command Syntax: RTRV-NE-SECU:*tid*::*ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. ctag – Correlation Tag  
See definition of “RTRV-NE-SECU: Retrieve NE security” (4-17)
- .

**Output format** There is one output line for each session. The first line contains user information for the user and session that issued the RTRV-NE-SECU command.

After receiving the RTRV-NE-SECU command, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
"uid::spec_block"
"uid"
.
.
"uid"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. uid – User ID  
ID of the user that initiated the RTRV-NE-SECU command.  
Listed below this *uid* are *uids* of all the other sessions. If the user from which the RTRV-NE-SECU command was issued is logged on via other sessions, the uid list will contain each other instance of the uid, but the additional listing is just like the listing of any other user, without the additional user information.  
See definition of “ACT-USER: Activate user” (4-4).

### Spec block parameters

1. age – Lockout Aging Period  
The time interval during which the number of invalid login attempts are counted. When *age* expires after the last invalid login attempt, the counter of invalid login attempts by that *uid* is reset to zero.  
Type: numeric string  
Range: 1 – 999 [minute]  
Default: 60
2. intrvl – Lockout Period  
The time during which login attempts using that *uid* will not be allowed. This occurs when the number of consecutive invalid login attempts by a *uid* reaches *thrshld*. When *intrvl* expires, login attempts will again be allowed from that *uid*. If this parameter is set to 0 (zero), the lockout feature is disabled.  
Type: numeric string  
Range: 0 – 99 [minute]  
Default: 10

3. thrshld – Lockout Threshold  
The maximum number of consecutive invalid login attempts that are allowed by a *uid*. If the count of invalid login attempts is equal to the threshold, the *uid* is locked out for *intrvl* period of time. If a login attempt is successful, the count of *invalid* login attempts by that *uid* is reset to zero.  
Type: numeric string  
Range: 2 – 99  
Default: 5
4. usrage – User ID Aging Period  
If a *uid* has never been used to perform a successful login during a specified time interval it shall be disabled. A value of 0 disables user ID aging.  
The *usrage* does not apply to the super-users. Super-users will be never disabled.  
Type: numeric string  
Range: 0 – 999 [days]  
Default: 10

#### Example input/output

The following example shows the successful completion of the RTRV-NE-SECU command by the NE:

```
RTRV-NE-SECU:LT-UNITE-123::123456;  
LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
"nbguser1::thrshld=3,intrvl=1,age=60,usrage=10"  
"njsmith"  
"hugo"  
"airmail"  
;
```

#### Error responses

The RTRV-NE-SECU command reports no special error responses. The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

#### Related TL1 messages

- “ACT-USER: Activate user” (4-4)
- “ED-NE-SECU: Edit NE security” (4-20)



## ED-NE-SECU: Edit NE security

---

The ED-NE-SECU command can be initiated by a user to modify global security parameters in the NE.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): S5  
Priority: 1  
Abortable: No

**Input format**      Command Syntax: ED-NE-SECU:*tid*::*ctag*:::*spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
      See definition of “RTRV-HDR: Retrieve header” (5-8).
2.    *ctag* – Correlation Tag  
      See definition of “RTRV-HDR: Retrieve header” (5-8).

#### Spec block parameters

1.    *age* – Lockout Aging Period  
      See definition of “RTRV-NE-SECU: Retrieve NE security” (4-17)  
      .
2.    *intrvl* – Lockout Period  
      See definition of “RTRV-NE-SECU: Retrieve NE security” (4-17)  
      .
3.    *thrshld* – Lockout Threshold  
      See definition of “RTRV-NE-SECU: Retrieve NE security” (4-17)  
      .
4.    *usrage* – User ID Aging Period  
      See definition of “RTRV-NE-SECU: Retrieve NE security” (4-17)  
      .

**Output format**      After receiving the ED-NE-SECU command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
```



;

The NE returns the successful completion response even if none of the parameter values are modified using the ED-NE-SECU command.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section for the RTRV-HDR command.

**Detailed behavior  
description**

This command updates the NE security administration values of *thrshld* (Lockout Threshold), *intrvl* (Lockout Period), *age* (Lockout Aging Period), *usrage* (User ID Aging Period) according the values in the parameters .

This update is reported via the corresponding ED-NE-SECU notification – see “ED-NE-SECU notification” (4-22).

**Example input/output**

The following example shows the successful completion of the ED-NE-SECU command by the NE:

```
ED-NE-SECU:LT-UNITE-123::123456:::thrshld=5,intrvl=2,  
age=50,usrage=200;  
    LT-WBM-789 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Related TL1 messages**

- “ACT-USER: Activate user” (4-4)
- “RTRV-NE-SECU: Retrieve NE security” (4-17)



## ED-NE-SECU notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).  
The ED-NE-SECU notification will have following specific syntax:  
ED-NE-SECU::*spec\_block*

### Output parameters

#### Spec block parameters

1. age – Lockout Aging Period  
See definition “RTRV-NE-SECU: Retrieve NE security” (4-17).
2. intrvl – Lockout Period  
See definition “RTRV-NE-SECU: Retrieve NE security” (4-17).
3. thrshld – Lockout Threshold  
See definition “RTRV-NE-SECU: Retrieve NE security” (4-17).
4. usrage – User ID Aging Period  
See definition “RTRV-NE-SECU: Retrieve NE security” (4-17).

**Example output** The example shows a normal notification after an ED-NE-SECU command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ED-NE-SECU:::thrshld=5,
intrvl=2,age=50,usage=200"
;
```



# User administration

## Overview

---

**Purpose** This entity refers to the User Security Data.

**Contents**

|                                        |                      |
|----------------------------------------|----------------------|
| RTRV-USER-SECU: Retrieve user security | <a href="#">4-24</a> |
| RTRV-USER: Retrieve user               | <a href="#">4-30</a> |
| ENT-USER-SECU: Enter user security     | <a href="#">4-32</a> |
| ENT-USER-SECU notification             | <a href="#">4-37</a> |
| ED-USER-SECU: Edit user security       | <a href="#">4-39</a> |
| ED-USER-SECU notification              | <a href="#">4-44</a> |
| ED-USER: Edit user                     | <a href="#">4-46</a> |
| ED-USER notification                   | <a href="#">4-48</a> |
| ED-PID: Edit password identifier       | <a href="#">4-49</a> |
| ED-PID notification                    | <a href="#">4-53</a> |
| DLT-USER-SECU: Delete user security    | <a href="#">4-54</a> |
| DLT-USER-SECU notification             | <a href="#">4-57</a> |



## RTRV-USER-SECU: Retrieve user security

---

The RTRV-USER-SECU command can be initiated by a user to retrieve user security information of one or all the users in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-USER-SECU:*tid*:[*uid*]:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *uid* – User ID  
 If this parameter is omitted, all *uids* will be retrieved.  
 See definition of “ACT-USER: Activate user” (4-4).
3. *ctag* – Correlation Tag  
 See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** If the NE has logins to report, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
uid::spec_block"
.
.
uid::spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. uid – User ID  
User ID whose security parameters are to be retrieved. See definition of “ACT-USER: Activate user” (4-4).

### Spec block parameters

1. alw\_login – Allow Login  
This parameter displays the enable/disable state of a User ID. A User ID can be automatically disabled by the system when the time specified by parameter *usrage* (see “RTRV-NE-SECU: Retrieve NE security” (4-17)) expires or via the ED-USER-SECU command. A User ID can be enabled via the ED-USER-SECU command.  
If a User ID is disabled, logins with that User ID are denied.  
Type: alphanumeric value set  
Range:
  - YES: User ID is enabled
  - NO: User ID is disabledDefault: YES
2. initobs – Initialization Observability  
This parameter allows the system to accept commands before it has completed initialization. Do not enable this parameter in networks using a Telcordia operations system.  
Type: alphanumeric value set  
Range: DISABLE – The feature is disabled.  
Default: DISABLE  
Note: *LambdaUnite*® MSS does not support Initialization Observability feature. This parameter is only for compatibility. The DISABLE value will be returned as fixed value.
3. page – Password Aging Interval  
This parameter specifies the period in days after which the user has to change the password of their account. If the value is set to 0 then the password aging function is disabled.  
Type: integer  
Range: 0, 7-999 [days]  
Default: 90

RTRV-USER-SECU: Retrieve user security

4. screen – Message Screening

This parameter specifies what output messages are associated with the *uid*. This parameter is omitted if the user has none of these values. Any combination of these values may be specified using ampersand (&)

Type: alphanumeric string An '&' is also allowed for concatenation of values.

Range:

- DBCHG  
Data Base Change notifications – changes in creation of entities, in user provisionable parameters, in deletion of entities will be reported (data base changes). The user will receive REPT DBCHG messages.
- STCHG  
State Change notifications – report changes in user non-provisionable parameters (state changes). The user will receive REPT DBCHG messages.
- PSCHG  
Protection switch notifications – report protection switch changes. User will receive REPT EVT and REPT SW messages.
- ALARMS  
Alarm notifications. The user will receive REPT ALM ENV, REPT ALM, and REPT EVT messages.
- OWN  
Responses to own commands. The user will receive no other notifications.  
Note: OWN will never be shown in conjunction with DBCHG, STCHG, PSCHG or ALARMS.
- NA  
Not applicable. This value is reserved for users with uidclass=MEMADMIN. The notification behavior is controlled in this case by the user class.

Default: OWN

If more than one value is set the values will be concatenated by '&'.

Example: DBCHG&ALARMS

RTRV-USER-SECU: Retrieve user security

5. tmout – Inactivity Timeout Period

If there are no messages between the user and the NE over the Timeout Period, the session is logged off. A value of 0 disables the timeout function.

Type: integer

Range: 0 – 999 [minutes]

Default: 30

6. ucpl – User Community Priority Level

This parameter specifies with which priority the commands of a user will be operated by the NE. Input commands from users with higher priority are executed before commands from users with lower priority.

Type: integer

Range: 1

Default: 1

Note: *LambdaUnite*® MSS does not support User Community Priority Level's. Only the default value 1 will be reported. The value is not settable.

7. uidclass – UID Class

This is the user class of a *uid*.

Type: alphanumeric value set

Range:

- OTHER – This is the default class. For users in this class, command privileges and notifications are controlled only by their UPCs and their notification Registration List.
- MEMADMIN – User class for memory administration users. All users of this class share the same atag counter for autonomous messages and are allowed to execute the command RTRV-AO.

Default: OTHER

8. upc – User Privilege Code List

This parameter specifies the user privilege code UCFC/UCAL pair assigned to a user. Multiple UCFC/UCALs can be specified using single ampersands (&). If a user try to operate a command with a privilege code higher than assigned to the user for the category of the command the command will be denied.

Type: alphanumeric string Also allowed is '&' for concatenation.

Range: Pi, Mi, Ti, Si, PMi, Di where "i" is an integer ranging from 0 to 5, with i=0 implying that there is no authorization for the functional category. S0 is not allowed.

RTRV-USER-SECU: Retrieve user security

Default: P1&M1&T1&S1&PM1 except for super users:  
P5&M5&T5&S5&PM5

Note: The system does not support commands for the D (DEBUG) category. Setting this privilege code does not have any effect on the system behavior and it will not be visible in output direction. It is only for compatibility.

See also "List of user privilege codes" (14-2).

### Example input/output Example for specified user:

The following example shows the successful completion of RTRV-USER-SECU command by the NE. The example below retrieves the security information associated with the user specified in the uid field:

```
RTRV-USER-SECU:LT-UNITE-123:nbguser1:123456;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
    "nbguser1::upc=P3&M3,screen=DBCHG&ALARMS,page=90,
    tmout=30,alw_login=YES,uidclass=OTHER"
;
```

### Example for all users:

The following example shows the successful completion of RTRV-USER-SECU command by the NE. The example below retrieves the security information associated with all the users from the NE:

```
RTRV-USER-SECU:LT-UNITE-123::123456;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
    "LUC01::upc=S5,screen=DBCHG&STCHG&PSCHG&ALARMS,
    page=90,tmout=30,alw_login=YES,uidclass=OTHER"
    "LUC02::upc=S5,screen=DBCHG&STCHG&PSCHG&ALARMS,
    page=47,tmout=11,alw_login=YES,uidclass=OTHER"
    "hugo::upc=P3&M3,screen=DBCHG&ALARMS,page=999,
    tmout=3,alw_login=YES,uidclass=OTHER"
    "egon::upc=P3&M3&T3&PM3,screen=PSCHG&STCHG,page=7,
    tmout=999,alw_login=NO,uidclass=OTHER"
    "ronald::upc=T2,screen=DBCHG&STCHG&PSCHG&ALARMS,
    page=0,tmout=0,alw_login=YES,uidclass=OTHER"
    "cathrin::upc=T2,screen=OWN,page=90,tmout=30,
```



RTRV-USER-SECU: Retrieve user security

```
alw_login=YES,uidclass=OTHER"  
;
```

**Error responses** The RTRV-USER-SECU command reports no special error responses. The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Validation rule: invalid uid**

If the NE receives an RTRV-USER-SECU command with an invalid (unknown) Only the own *uid* value.

Error code: IDNV - Input, Data Not Valid, invalid UID

**Related TL1 messages**

- “ED-USER: Edit user” (4-46)
- “ENT-USER-SECU: Enter user security” (4-32)
- “ED-USER-SECU: Edit user security” (4-39)
- “DLT-USER-SECU: Delete user security” (4-54)
- “RTRV-USER: Retrieve user” (4-30)

**References** TR-NWT-000835, OTGR Section 12.5: Operations Applications Messages – NE and Network System Security Administration Messages.



## RTRV-USER: Retrieve user

---

The RTRV-USER command retrieves a user's own security information.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): S2  
Priority: 1  
Abortable: Yes

**Input format**      Command Syntax: RTRV-USER:*tid*::*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format**      After receiving the RTRV-USER command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"uid::spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

#### Command parameters

1. *uid* – User ID  
User ID whose security parameters are to be retrieved.  
See definition of input parameters “ACT-USER: Activate user” (4-4).

### Spec block parameters

1. page – Password Aging Interval  
See definition “RTRV-USER-SECU: Retrieve user security” (4-24).
2. screen – Message Screening  
See definition “RTRV-USER-SECU: Retrieve user security” (4-24).
3. tmout – Inactivity Timeout Period  
See definition “RTRV-USER-SECU: Retrieve user security” (4-24).
4. uidclass – UID Class  
See definition of output parameter *uidclass* in “RTRV-USER-SECU: Retrieve user security” (4-24).
5. upc – User Privilege Code List  
See definition “RTRV-USER-SECU: Retrieve user security” (4-24).

### Example input/output

The following example shows the successful completion of RTRV-USER command by the NE:

```
RTRV-USER:LT-UNITE-123::123456;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
    "nbguser1::upc=P3&M3,screen=DBCHG&ALARMS,page=999,  
    uidclass=OTHER,tmout=3"  
;
```

### Error responses

The RTRV-USER command reports no special error responses. The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

### Related TL1 messages

- “ED-USER: Edit user” (4-46)
- “RTRV-USER-SECU: Retrieve user security” (4-24)

### References

TR-NWT-000835, OTGR Section 12.5: Operations Applications Messages – NE and Network System Security Administration Messages.



## ENT-USER-SECU: Enter user security

---

The ENT-USER-SECU command is used by an administrator to enter a new user and security parameters associated with that user.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S5  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ENT-USER-SECU:*tid:uid:ctag::pid,,[upc]:[spec\_block]*;

**Input parameters** **Important!** During a software download (CIT to NE) it may happen that the *Navis*<sup>®</sup> Optical EMS-NE connection get lost. This is caused by the *tmout* (inactivity timeout period) parameter. A value of 0 will disable the timeout function (see Spec block parameters description below).

Note: The new setting becomes operational only after a new login.

### Command parameters

1. tid – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. uid – User ID  
This parameter specifies the new user ID (*uid*) name.  
See definition of input parameters of “ACT-USER: Activate user” (4-4).
3. ctag – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
4. pid – Password ID  
This parameter specifies the password ID for the *uid*.  
See definition of “ACT-USER: Activate user” (4-4).
5. upc – User Privilege Code List  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).

**Spec block parameters**

1. page – Password Aging Interval  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).
2. screen – Message Screening  
This parameter specifies what output messages are associated with the *uid*. This parameter is omitted if the user has none of these values. Any combination of these values may be specified using ampersand (&)  
Type: alphanumeric string. An ‘&’ is also allowed for concatenation of values.  
Range:
  - DBCHG  
See definition of screen parameter.DBCHG in “RTRV-USER-SECU: Retrieve user security” (4-24).
  - STCHG  
See definition of *screen* parameter.STCHG in “RTRV-USER-SECU: Retrieve user security” (4-24).
  - PSCHG  
See definition of *screen* parameter.PSCHG in “RTRV-USER-SECU: Retrieve user security” (4-24).
  - ALARMS  
See definition of *screen* parameter.ALARMS in “RTRV-USER-SECU: Retrieve user security” (4-24).
  - ALL  
All notifications.  
This value can be used in input direction as a short-hand notation for DBCHG&STCHG&PSCHG&ALARMS.
  - OWN  
Responses to own commands. The user will receive no other notifications.
  - NA  
See definition of *screen* parameter.NA in “RTRV-USER-SECU: Retrieve user security” (4-24).
  - Default: OWN  
If more than one value is set the values will be concatenated by ‘&’. Example: DBCHG&ALARMS  
Restriction: When *uidclass* is set to MEMADMIN, *screen* must be set to NA.

## ENT-USER-SECU: Enter user security

3. **tmout** – Inactivity Timeout Period  
See definition “RTRV-USER-SECU: Retrieve user security” (4-24).
4. **uidclass** – UID Class  
See definition of output parameter **uidclass** in “RTRV-USER-SECU: Retrieve user security” (4-24).  
Restriction: When **uidclass** is set to MEMADMIN, **screen** must be set to NA.

**Output format** After receiving the ENT-USER-SECU command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters **sid**, **date**, **time**, and **ctag** included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

This command creates the NE’s user data. A new user **uid** (User ID) will be established. The values of **pid** (Password ID), **upc** (User Privilege Code List), **alw\_login** (Allow Login), **screen** (Message Screening), **page** (Password Aging Interval), **tmout** (Inactivity Timeout Period) will be assigned to the new user. If optional values are not specified the default values will be used.

This update is reported via the corresponding ENT-USER-SECU notification – see “ENT-USER-SECU notification” (4-37) section.

The updated **screen** attribute has either both values STCHG and DBCHG or none. If only one value is added then the other is implicitly added by the NE. If only one is removed then the other is implicitly removed by the NE.

The NE will always have two preinstalled users with full privileges in all functional categories. These two users will be referred to as super-users. The two super-users are also Security Administrators because they have the S5 privilege code. The NE will not allow adding additional super-user type users. It will not be possible to remove either of the original super-user login IDs. An existing login ID (**uid**) except the super-user login IDs cannot be renamed. It must be deleted and re-entered with new **uid** value.

ENT-USER-SECU: Enter user security

**Example input/output**

The following example shows the successful completion of the ENT-USER-SECU command by the NE:

```
ENT-USER-SECU:LT-UNITE-123:nbguser1:123456::pass12+, ,
P3&M3:screen=DBCHG&STCHG&PSCHG,page=345,tmout=360;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
;
```

**Error responses**

The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Validation rule: Entering user’s own or existing uid.**

If the NE receives an ENT-USER-SECU command from a user trying to enter his or her own *uid* or an existing *uid*.

Error code: IDNV - Input, Data Not Valid, duplicate UID

**Validation rule: Maximum number of uids reached**

If the NE receives an ENT-USER-SECU command when it already has reached its maximum number of defined User IDs.

Error code: SLEM - Status, List Exceeds Maximum UIDs

**Validation rule: Invalid upc**

If the NE receives an ENT-USER-SECU command with a upc=P5&M5&T5&S5&PM5 or a upc=S0.

Error code: IDNV - Input, Data Not Valid, invalid UPC

**Validation rule: Compatibility screen, uidclass parameter**

If the NE receives an ENT-USER-SECU command with *uidclass*=MEMADMIN and *screen* !=NA it rejects the command with

Error code: IDNV - Input, Data Not Valid, incompatible *screen*, *uidclass* parameters

**Related TL1 messages**

- “DLT-USER-SECU: Delete user security” (4-54)
- “ED-USER-SECU: Edit user security” (4-39)
- “RTRV-USER-SECU: Retrieve user security” (4-24)

ENT-USER-SECU: Enter user security

**References** TR-NWT-000835, OTGR Section 12.5: Operations Applications  
Messages – NE and Network System Security Administration  
Messages.





## ENT-USER-SECU notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).

The ENT-USER-SECU notification will have following specific syntax:

ENT-USER-SECU:*uid*:[*upc*]:*spec\_block*

### Output parameters

#### Command parameters

1. uid – User ID  
See input parameter definition of “ACT-USER: Activate user” (4-4).
2. upc – User Privilege Code List  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24) command.

#### Spec block parameters

1. alw\_login – Allow Login  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24) command.
2. page – Password Aging Interval  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24) command.
3. screen – Message Screening  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24) command.
4. tmout – Inactivity Timeout Period  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24) command.
5. uidclass – UID Class  
See definition of output parameter *uidclass* in “RTRV-USER-SECU: Retrieve user security” (4-24).

**Example output** The example shows a normal notification after an ENT-USER-SECU Command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ENT-USER-SECU:nbguser1:,,
```

```
P3&M3:screen=DBCHG&STCHG&PSCHG,page=345,tmout=360,  
uidclass=OTHER,alw_login=YES"  
;
```



## ED-USER-SECU: Edit user security

---

The ED-USER-SECU command is used by an administrator to edit the security parameters associated with a user.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S5  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ED-USER-SECU:*tid:uid:ctag*::[*new\_pid*],[*upc*][:*spec\_block*];

**Input parameters** **Important!** During a software download (CIT to NE) it may happen that the *Navis*<sup>®</sup> Optical EMS-NE connection get lost. This is caused by the *tmout* (Inactivity Timeout Period) parameter. A value of 0 will disable the timeout function (see Spec block parameters description below).

Note: The new setting becomes operational only after a new login.

### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *uid* – User ID  
ED-USER-SECU input  
Specifies the user ID (*uid*) name which should be edited.
3. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
4. *new\_pid* – New Password ID  
This parameter specifies the new password ID for the addressed *uid*. This is an optional parameter and in the absence of a value the default is the current value.  
See definition of *pid* in “ACT-USER: Activate user” (4-4).
5. *upc* – User Privilege Code List  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).

### Spec block parameters

1. **alw\_login** – Allow Login  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).
2. **newuid** – New UID  
This parameter allows to rename the 2 predefined superusers. It cannot be used to rename a non-superuser login. See definition of **uid** in the Input parameter section of “ACT-USER: Activate user” (4-4).
3. **page** – Password Aging Interval  
See definition of **page** in “RTRV-USER-SECU: Retrieve user security” (4-24).
4. **screen** – Message Screening  
See definition of **screen** in “RTRV-USER-SECU: Retrieve user security” (4-24).
5. **tmout** – Inactivity Timeout Period  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).
6. **uidclass** – UID Class  
See definition of output parameter **uidclass** in “RTRV-USER-SECU: Retrieve user security” (4-24).  
Restriction: When **uidclass** is set to MEMADMIN, **screen** must be set to NA.

**Output format** After receiving the ED-USER-SECU command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the ED-USER-SECU command does not alter existing user security parameters, the NE provides a normal completion response. An example is when the **upc** of the **uid** is P3 and an ED-USER-SECU command is received which sets the **upc** to P3.

The output parameters **sid**, **date**, **time**, and **ctag** included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

This command updates the user data of the user specified in the **uid** parameter. The values of **upc** (User Privilege Code List), **alw\_login** (Allow Login), **screen** (Message Screening), **page** (Password Aging Interval), **tmout** (Inactivity Timeout Interval) will be updated according the parameter values. **new\_pid** updates the **pid** (Password ID). **newuid** updates the uid (User ID).

It will be reported via the corresponding ED-USER-SECU notification – see “ED-USER-SECU notification” (4-44) section.

The updated **screen** attribute either has both values STCHG and DBCHG or none. If only one value is added then the other is implicitly added by the NE. If only one is removed then the other is implicitly removed by the NE.

The NE always has two preinstalled users with full privileges in all functional categories. These two users will be referred to as supe-ruser. The NE will not allow adding additional super-user type users. It will not be possible to remove either of the original super-user login IDs. An super-users’s **upc** cannot be modified using the ED-USER-SECU command.

An existing non-super-user login ID (**uid**) cannot be renamed. It must be deleted and re-entered.

A superuser login ID (**uid**) can be renamed by a security administrator (privilege code S5 in category Security Administration).

The ED-USER-SECU command enables an Security Administrator to modify the password, user privilege code(s), and/or user security parameters of the non-administrative users. An Security Administrator may modify the password and/or user security parameters of the other Security Administrators including super-users (except the user privilege code).

If the **uid** is currently logged in when the ED-USER-SECU command is successfully executed, the user session identified by the **uid** is not terminated and is unaffected. It will continue to use the previous values. The changes will take effect the next time the user logs in.

**Example input/output**

The following example shows the successful completion of the ED-USER-SECU command by the NE:

```
ED-USER-SECU:LT-UNITE-123:nbguser1:123456::,pass13+, ,
P3&M3&PM2:screen=DBCHG,page=70,tmout=0, alw_login=YES;
LT-UNITE-123 00-01-01 08:00:00
```

```
M 123456 COMPLD  
;
```

This example shows how the super-users *uid* can be changed:

```
ED-USER-SECU:LT-UNITE-123:LUC01:123456::,,,:newuid=Admin1;  
LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses** The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Validation rule: Invalid *uid***

If the NE receives an ED-USER-SECU command with an invalid (unknown) *uid* value.

Error code: IDNV - Input, Data Not Valid, invalid UID

**Validation rule: Invalid *upc***

If the NE receives an ED-USER-SECU command with a *upc* value=P5&M5&T5&S5&PM5 for a non-administrator login account or a *upc*=S0 or one super-user tries to make the other super-user a non-super-user.

Error code: IDNV - Input, Data Not Valid, invalid UPC

**Validation rule: newuid has the same value of an existing *uid***

If the NE receives an ED-USER-SECU command from a user trying to change with the *newuid* the *uid* of the addressed user id to an existing *uid* different from the addressed user id.

Error code: IDNV - Input, Data Not Valid, duplicate UID

**Validation rule: newuid defined for non superuser *uid***

If the NE receives an ED-USER-SECU command from a user trying to change the *uid* of a non super-user.

Error code: IDNV - Input, Data Not Valid, newuid for non superuser

**Validation rule: disabling of superusers**

If the NE receives an ED-USER-SECU command from a user trying to disabling *uid* of a super-user.

Error code: IDNC - Input, Data Not Consistent

### **Related TL1 messages**

- “DLT-USER-SECU: Delete user security” (4-54)
- “ED-USER-SECU: Edit user security” (4-39)
- “RTRV-USER-SECU: Retrieve user security” (4-24)

**References** TR-NWT-000835, OTGR Section 12.5: Operations Applications Messages – NE and Network System Security Administration Messages.



## ED-USER-SECU notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).

The ED-USER-SECU notification will have following specific syntax:

ED-USER-SECU:*uid*::,[*upc*]:*spec\_block*

### Output parameters

#### Command parameters

1. *uid* – User ID  
See definition of input parameters of “ACT-USER: Activate user” (4-4).  
If the *uid* was changed via the ENT-USER-SECU Command and a value of *newuid* is different from the old *uid* then the *uid* contains in the notification the value of old *uid*.
2. *upc* – User Privilege Code List  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).

#### Spec block parameters

1. *alw\_login* – Allow Login  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).
2. *newuid* – New UID  
see definition of *uid* in input parameter section of “ACT-USER: Activate user” (4-4).
3. *page* – Password Aging Interval  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).
4. *screen* – Message Screening  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).
5. *tmout* – Inactivity Timeout Period  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).
6. *uidclass* – UID Class  
See definition of output parameter *uidclass* in “RTRV-USER-SECU: Retrieve user security” (4-24).



**Example output**

The example shows a normal notification after an ED-USER-SECU command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ED-USER-SECU:nbguser1:,,
P3&M3&PM2:screen=DBCHG,page=70,tmout=0,newuid=nbguser1,
alw_login=YES"
;
```

This is an example notification in case of the user id was changed for a super-user:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ED-USER:nbguser1::SCREEN=DBCHG"
;
```



## ED-USER: Edit user

---

The ED-USER command modifies a user's own security parameters.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
 Priority: 1  
 Abortable: No.

**Input format** Command Syntax: ED-USER:*tid*::*ctag*:::[*spec\_block*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
 See definition of “RTRV-HDR: Retrieve header” (5-8).

#### Spec block parameters

1. *screen* – Message Screening  
 See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).

**Output format** After receiving the ED-USER command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the ED-USER command does not alter existing user security parameters, the NE provides a normal completion response.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

This command updates the user data of the user *uid* (User ID) who requests the command. The value of *screen* (Message Screening) will be updated according the parameter value.

It will be reported via the corresponding ED-USER notification – see “ED-USER notification” (4-48) section.

The updated *screen* attribute has both values STCHG and DBCHG or none. If only one value is added then the other is implicitly added by the NE. If only one is removed then the other is implicitly removed by the NE.

When the ED-USER command is successfully executed, the user session is not terminated and is unaffected. It will continue to use the previous values. The changes will take effect the next time the user logs in.

**Example input/output**

The following example shows the successful completion of the ED-USER command by the NE:

```
ED-USER:LT-UNITE-123::123456::screen=DBCHG;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Validation rule: screen value not allowed for *uid***

A user is not able to add a message type to their *screen* parameter list if:

- the message type was never added a security administrator or
- the message type has been removed by a security administrator

**Error code:** IDNV – Input, Data Not Valid, screen value was not set by security administrator

**Related TL1 messages**

“RTRV-USER: Retrieve user” (4-30)



## ED-USER notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).

The ED-USER notification will have following specific syntax:

ED-USER:*uid::spec\_block*

### Output parameters

#### Command parameters

1. uid – User ID  
See input parameter definition of “ACT-USER: Activate user” (4-4).

#### Spec block parameters

1. screen – Message Screening  
See definition of “RTRV-USER-SECU: Retrieve user security” (4-24).

**Example output** The example shows a normal notification after an ED-USER command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ED-USER:nbguser1::
screen=DBCHG"
;
```



## ED-PID: Edit password identifier

---

The ED-PID command can be initiated by a user to change the user's own password on the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ED-PID:*tid::ctag::old\_pid,new\_pid*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
3. *old\_pid* – Old Password ID  
This is the current *pid* of the user.  
See definition of *pid* in “ACT-USER: Activate user” (4-4).
4. *new\_pid* – New Password ID  
This parameter specifies the new password ID. The *new\_pid* value must differ from the *old\_pid* value by at least one character.

**Output format** After receiving the ED-PID command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

If the password change request completes successfully during login procedure after the password expired and transitions the state of the login procedure from the “Password\_Expired” state to the “Login\_Active” state, the following normal completion response from the ACT-USER command is returned:

```
sid date time
```

```
M  ctag COMPLD
    "uid:lastdate,lasttime,attempts,systype,release,upc"
    /* Lucent Technologies systype release
    User Privilege Code: upc
    LUCENT TECHNOLOGIES - PROPRIETARY
    THIS SOFTWARE CONTAINS INFORMATION OF LUCENT
    TECHNOLOGIES
    AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE
    WITH APPLICABLE AGREEMENTS.
    NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.
    USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY
    AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN
    LUCENT TECHNOLOGIES AND CUSTOMER.
    UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
    */
;
```

For description of these output message refer to “ACT-USER: Activate user” (4-4).

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

When the NE receives an ED-PID command, the *pid* (password ID) associated with the user’s login identifier will be changed on the NE provided that:

- the user is currently logged in on the NE
- the *old\_pid* provided matches the current password for that login identifier
- the *new\_pid* provided satisfies the password requirements of the NE.

It will be reported via the corresponding ED-PID notification – see “ED-PID notification” (4-53) section – if a session is already established; i.e. there will be no notification in the password expiry scenario during a login procedure.

When the ED-PID command is successfully executed, the user session is not terminated and is unaffected. It will continue to use the previous values. The changes will take effect the next time the user logs in.

**Example input/output**    The following example shows a successful password change operation:

```
ED-PID:LT-UNITE-123::123456::soup3r+,mash%52;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows a successful completion response of ED-PID while attempting the ACT-USER command:

```
ED-PID:LT-UNITE-123::123456::soup3r+,mash%52;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
" nbguser1:00-12-31,09-00-00,1,WaveStar_UNITE,1.1.13,P3&M3"  
/* Lucent Technologies WaveStar_UNITE Release 1.1.13  
User Privilege Code: P3&M3  
LUCENT TECHNOLOGIES - PROPRIETARY  
THIS SOFTWARE CONTAINS INFORMATION OF LUCENT  
TECHNOLOGIES  
AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE  
WITH APPLICABLE AGREEMENTS.  
NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.  
USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY  
AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN  
LUCENT TECHNOLOGIES AND CUSTOMER.  
UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.  
*/  
;
```

**Error responses**    The general error responses defined in "RTRV-HDR: Retrieve header" (5-8) are also valid for this command.

**Validation rule: Invalid *old\_pid***

If the NE receives an ED-PID command with an *old\_pid* value that does not match with the password ID of the associated user login ID.

Error code: IDNV - Input, Data Not Valid, wrong *old\_pid*

**Validation rule: Missing or invalid or syntactically incorrect *new\_pid***

If the NE receives an ED-PID command with a missing *new\_pid* or the *new\_pid* is same as the *old\_pid* or the *new\_pid* is syntactically incorrect.

Error code: IDNV - Input, Data Not Valid, incorrect new\_pid

**References** TR-NWT-000835, OTGR Section 12.5: Operations Applications  
Messages – NE and Network System Security Administration  
Messages.





## ED-PID notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).

The ED-PID notification will have following specific syntax:

ED-PID:*uid*

### Output parameters

#### Command parameters

1. uid – User ID  
See input parameter definition of “ACT-USER: Activate user” (4-4).

**Example output** The example shows a normal notification after an ED-PID command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ED-PID:nbguser1"
;
```



## DLT-USER-SECU: Delete user security

---

The DLT-USER-SECU command is used by an administrator to remove a non-administrator type user from the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S5  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: DLT-USER-SECU:*tid*:*uid*:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *uid* – User ID  
This parameter specifies the *uid* which should be deleted. Only a single uid is supported in the command.  
See input parameter definition of “ACT-USER: Activate user” (4-4).
3. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** After receiving the DLT-USER-SECU command, the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** Description: The DLT-USER-SECU command is used by an appropriate administrator to delete a user id specified by *uid* from the NE. The DLT-USER-SECU command is applicable where a user

**DLT-USER-SECU: Delete user security**

account has to be deleted from the NE. The user data stored in the NE will be updated.

It will be reported via the corresponding DLT-USER-SECU notification – see “DLT-USER-SECU notification” (4-57) section.

It is not possible to delete the user id of one of the predefined super-users.

If the user with the specified *uid* is currently logged into the NE when this command is successfully executed, the user session identified by this *uid* is terminated, and the NE responds to the user who entered the DLT-USER-SECU command with a normal completion response.

**Example input/output**

The following example shows the successful completion of the DLT-USER-SECU command by the NE:

```
DLT-USER-SECU:LT-UNITE-123:nbguser1:123456;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Validation rule: Invalid *uid***

If the NE receives a DLT-USER-SECU command with a invalid (unknown) *uid*.

Error code: IDNV – Input, Data Not Valid, invalid UID

**Validation rule: Attempt to delete administrator's *uid***

Attempt to delete administrator's *uid*.

Error code: IDNV – Input, Data Not Valid. Attempting to delete an administrator login. Two administrator user logins are required at all times.

**Related TL1 messages**

- “ENT-USER-SECU: Enter user security” (4-32)
- “ED-USER-SECU: Edit user security” (4-39)
- “RTRV-USER-SECU: Retrieve user security” (4-24)

DLT-USER-SECU: Delete user security

**References** TR-NWT-000835, OTGR Section 12.5: Operations Applications  
Messages – NE and Network System Security Administration  
Messages.



## DLT-USER-SECU notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).

The DLT-USER-SECU notification will have following specific syntax:

DLT-USER-SECU:*uid*

### Output parameters

#### Command parameters

1. uid – User ID  
See input parameter definition of *uid* in “ACT-USER: Activate user” (4-4).

**Example output** The example shows a normal notification after an DLT-USER-SECU command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:DLT-USER-SECU:nbguser1"
;
```







# 5 TL1 messages - configuration management

## Overview

---

**Purpose** This chapter contains the TL1 interface definition for the domain “configuration management”.

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# System

## Overview

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**Purpose** This section includes the system level configuration messages.

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## RTRV-HDR: Retrieve header

---

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>          | The RTRV-HDR command can be initiated by a user to request that the NE returns a normal completion response.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Parameters</b>           | <p>In TL1 terminology, a parameter block always follows a colon ':'. Any trailing colons at the end of a command line may be omitted if they do not contain any parameters. A parameter block can be either a block of position-defined parameters or it can be a spec_block (a block of name-defined parameters). In a block of position-defined parameters, the parameter values are supplied at predefined positions within the parameter block. Two parameter values are separated by a comma. If the default value for a parameter is to be used, a null value is placed in the command line and the position of the parameter is maintained by keeping the comma. When default values are used for parameters at the end of the parameter block, it is not necessary to include all the trailing commas. In all the TL1 command pages, for position-defined parameter blocks, simplified notation such as: [d],[e],[f],[g] is used to represent the following format: [d],[e],[f],[g]]. The following notation is also equivalent: [d],[e],[f],[g]. In a specification block (spec_block), every parameter name is followed by an equal sign and the parameter value. The command line does not have to use all of the spec_block parameters. Also, spec_block parameters can appear in any order.</p> |
| <b>NULL parameter value</b> | The word NULL is used for some of the parameter values in TL1 messages. For both input and output parameters, NULL means that the parameter is omitted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Quoted text strings</b>  | <p>Some string-valued parameters, like NENAME, allow any printable character within the double-quoted string (""). On output (RTRV and REPT DBCHG), the string is surrounded by escaped quotes \"\". Those parameters can contain any printable characters, including the TL1 parse characters (; : , "). Spaces and upper/lowercase are also preserved. Using two double-quotes "" will set the parameter to an empty string. But according to GR-831, within a quoted string, a double-quote character is escaped as \" and the backslash is escaped as \\. Within a backslash-quoted string (\\\"), the double-quote character is escaped as \" and the backslash is escaped as \\. Another caveat is that while that parameter can contain any printable character,</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

RTRV-HDR: Retrieve header

in networks using a Telcordia OS, the TL1 parse characters (; : , ") should not be used. Particularly, the semicolon (;), less-than (<), and greater-than (>) characters must not be used in the string.

**Other notational conventions**

The following conventions are used in the description of RTRV-HDR itself to visualize non-printable characters (in all other commands those characters are indicated by a blank).

**<cr>**

A carriage return in ASCII

**<lf>**

A line feed in ASCII

**<>**

The brackets are used to enclose one or more information items, e.g., <date>, <time>, <source identifier>, etc. The brackets are not transmitted.

**^**

The character ^ indicates a blank that must appear in the message.

**Properties**

Login Privilege: User Privilege Code (UCFC/UCAL): Any

Priority: 1

Abortable: Yes

**Input format**

Syntax: RTRV-HDR:*tid::ctag*;

## Input parameters

### Command parameters

1. tid – Target Identifier  
This is the currently active name of the NE to which the command is addressed. The *tid* is a case insensitive character string.  
Type: identifier, in addition the special character underscore ("\_") and the password characters are allowed  
Range: 1 to 20 characters  
Default: LUCENT-UNITE-NE
2. ctag – Correlation Tag  
This is included in the command by the TL1 user and is repeated by the NE in the response to allow the TL1 user to associate the command and response messages.  
Type: alphanumeric string.  
Range: non-zero decimal number or identifier of up to 6 characters.  
Note: Current implementation also allows '0' as valid CTAG, which is an extension to GR-831.

## Output format

### Normal system response

After receiving the RTRV-HDR command, the following normal completion response is returned:

```
IP^ctag<cr><lf>
<cr><lf><lf>
^^^sid^date^time<cr><lf>
M^^ctag^COMPLD<cr><lf>
;
```

### RL Acknowledgment

If a command cannot be executed at the present time, the following RL (Repeat Later) Acknowledgment is returned:

```
RL^ctag<cr><lf>
<cr><lf><lf>
```

### Continuation responses and IP acknowledgments

For commands that generate output, if the output response is less than or equal to 4096 bytes, the response will be terminated by the



semicolon (;) character. If the output response is greater than 4096 bytes, the response lines will be partitioned into multiple responses. The continuation response will have another set of header lines with the same ctag, along with additional output response lines. Each response will be terminated with the greater than (>) character, except the last one which will be terminated by the semicolon (;) character.

## Output parameters

1. sid – Source Identifier  
This is the currently active name of the NE to which responses to the command.  
See definition of *tid* input parameter in “RTRV-HDR: Retrieve header” (5-8).
2. date – Date  
Date when output message is generated. This has the format YY-MM-DD (year-month-day).  
Type: value set.  
Range:
  - for YY: 00 to 99
  - for MM: 01 to 12
  - for DD: 01 to 312-digit years  
TL1 messages use YY-MM-DD for the format of a date, meaning that the year only has two digits. This is consistent with Telcordia requirements. Internally, however, the system does use a 4-digit year. When the year appears in a response, the internal 4-digit year is truncated to two digits. When the year appears as an input parameter, for example in the ED-DAT command, years in the range 90-99 will represent 1990-1999, and years in the range 00-37 will represent 2000-2037.  
Default: 00-01-01
3. time – Time  
Time when output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).  
Type: value set

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Range:

- for HH: 00 to 23
- for MM: 00 to 59
- for SS: 00 to 59

Default: 00:00:00

4. M – Message

This parameter indicates that the output message is generated in response to a manual command.

Type: value set

Range: M

5. ctag – Correlation Tag

See definition of *ctag* input parameter in “RTRV-HDR: Retrieve header” (5-8).

6. IP – In Progress

IP is sent in response to all commands with the exception of commands that result in error code output.

Type: value set.

Range: IP

7. RL – Repeat Later

The requested command cannot be executed due to unavailable system resources. The command may be entered again later.

Type: value set.

Range: RL.

8. COMPLD – Completion Code

This parameter indicates that the command has been completed. COMPLD for successful command execution For a command that is decomposed into a set of atomic commands a COMPLD completion code means that the command was successful for all atomic commands (e.g. AID ranges, group alias).

COMPLD for no changes If a parameter has a current value, and a provisioning command attempts to reprovision the parameter with a value that is the same as its current value, the command will return a COMPLD completion code.

Type: value set.

Range: COMPLD.

**Detailed behavior  
description**

The RTRV-HDR command returns a normal completion response with *sid*, *date* and *time* output parameter as described above.

### Example input/output

```
RTRV-HDR:LT-UNITE::123456;  
IP 123456  
<  
    LT-UNITE 00-11-03 08:00:00  
M 123456 COMPLD  
;
```

### Error responses

The following error conditions are not unique to the RTRV-HDR command but may apply to any TL1 command. Other commands will use the defined command specific error codes with additional error texts.

There is no implied priority order of error checking suggested by this list of error responses.

In general the *sid* value in the error responses is that of the addressed NE. This is true even if a TL1-GNE sends an error message on behalf of an RNE. Some exceptions are noted for some error codes below (e.g. IITA). If the TL1-GNE forwards a command to a remote NE and a communication failure occurs before the remote NE is able to respond, it is understood that no response may be returned.

When an error response is returned, there may not be an in-progress (IP) acknowledgment in the response.

Note, that validation rules for the generic error conditions described below are not repeated for each specific command in the Error response section.

### General Format

The general output format is shown below, where <error code> is a 4-character code and <error text> is a text string.

```
<cr><lf><lf>  
    sid date time<cr><lf>  
M  ctag^DENY<cr><lf>  
    <error code><cr><lf>  
    /*<error text[, additional command specific error  
    text]>*/<cr><lf>  
;
```

### Input failure (ICNV)

If there was an input failure because the command cannot be processed, the following error response is returned:

```
sid date time<cr><lf>
M ctag DENY
  ICNV
/*Input, Command Not Valid*/
;
```

### Input failure for omitted TID

If a *tid* value is required but no *tid* value is included, the following error response is returned, using the *sid* of the system that detected the error:

```
sid date time<cr><lf>
M ctag DENY
  ICNV
/*Input, Command Not Valid, missing TID*/
;
```

### Command not recognized (SCNF)

If the command is not recognized, the following error response is returned:

```
sid date time
M ctag DENY
  SCNF
/* Status, Command Not Found, command not recognized */
;
```

### Syntax or Punctuation Error (IISP)

If the command cannot be parsed due to a syntax or punctuation error, the following error response is returned. If the command cannot be parsed for at least 3 colons, and no more than the maximum number of colons allowed before the TL1 end-of-message semicolon, the following error response is returned:

```
sid date time
M ctag DENY
  IISP
/* Input, Invalid Syntax or Punctuation */
;
```

### Command too long

If the command is longer than 4096 characters, the following error response is returned:

```
sid date time<cr><lf>
M ctag DENY
IISP
/*Input, Invalid Syntax or Punctuation, command too
long*/
;
```

### Parameter Input Failure (INUP)

If there is an input failure due to the parameter types, the following error response is returned:

```
sid date time<cr><lf>
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter */
;
```

### Parameter Missing (IPMS)

If an input parameter value is missing, the following error response is returned:

```
sid date time<cr><lf>
M ctag DENY
IPMS
/* Input, Parameter MiSsing, <parameter name> is
missing */
;
```

### Any Input Parameter not valid (IDNV)

If any one or more of the input parameter values are not valid, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid */
;
```

### **Input Parameter not valid (IDNV)**

If an input parameter value is not valid, the following error response is returned. This is the preferred error response.

```
sid date time<cr><lf>
M ctag DENY
  IDNV
/* Input, Data Not Valid, invalid <parameter name> */
;
```

### **Input Parameter appears more than once (IBEX)**

If a name-defined input parameter appears more than once within a command the following error response is returned.

```
sid date time<cr><lf>
M ctag DENY
  IBEX
/* Input, Block, Extra, more than one appearances
of a parameter */
;
```

### **Invalid Entity (IENE)**

If there is an input failure due to an invalid entity, the following error response is returned:

```
sid date time<cr><lf>
M ctag DENY
  IENE
/* Input, Entity Not Exists */
;
```

### **Invalid Command Qualifier (IPNC)**

If there is an input failure due to an invalid command qualifier, the following error response is returned:

```
sid date time<cr><lf>
M ctag DENY
  IPNC
/* Input, Parameter Not Consistent */
;
```

### Invalid Instance (SDNC)

If there is an input failure due to an invalid instance of an entity, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent,invalid instance of
entity */
;
```

### Incorrect TID (IITA)

If the command has a syntactically incorrect *tid*, the following error response is returned, using the *sid* of the system that detected the error:

```
sid date time
M ctag DENY
IITA
/* Input, Invalid TArget identifier,incorrect syntax */
;
```

### Unknown TID (IITA)

If a command contains an unknown tid value (a *tid* value that does not exist in the network), the following error response is returned, using the *sid* of the system that detected the error:

```
sid date time
M ctag DENY
IITA
/* Input, Invalid TID, Unknown TID */
;
```

### Not reachable TID (IITA)

If a command has a valid *tid* value but the addressed remote NE is temporarily unable to communicate with the TL1-GNE, the following error response is returned, using the *sid* of the addressed system:

```
sid date time
M ctag DENY
IITA
/* Input, Invalid TID,Communications Failure */
;
```

### **Too much AID parameters (ICNV)**

If the command line has more aid parameters in the aid block than are allowed for that command, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, extra AID */
;
```

### **Missing AID (ICNV)**

If the command line has fewer aid parameters in the aid block than are required for the command, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, required AID missing */
;
```

### **Incorrect AID Syntax (IIAC)**

For commands that have aid input parameters in the aid block, if the aid is syntactically incorrect, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid ACcess identifier, incorrect syntax
*/
;
```

### **Unknown AID (IIAC)**

For commands that have aid input parameters in the aid block, if the aid is valid syntactically but has an unknown value, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid ACcess identifier, unknown AID */
;
```



### Missing CTAG (ICNV)

If the *ctag* value is missing, the following error response is returned. Note that the *ctag* value is 0 in the error response:

```
sid date time
M 0 DENY
ICNV
/* Input, Command Not Valid,missing CTAG */
;
```

### Invalid CTAG (IICT)

If the *ctag* value is non-NULL but invalid, the following error response is returned. Note that the same invalid *ctag* value is used for the *ctag* field in the error response:

```
sid date time
M ctag DENY
IICT
/* Input, Invalid Correlation Tag (CTAG), incorrect
syntax */
;
```

### Input Parameter Range Incorrect (IDRG)

If an input parameter accepts a range but the given range is incorrect, the following error response is returned:

```
sid date time
M ctag DENY
IDRG
/* Input, Data, Range Error */
;
```

### Invalid File or Directory Name (SDNC)

If the command failed due to an invalid file or directory name, the following error response is returned:

```
sid date time
M ctag DENY
SDNC
/* Status, Data Not Consistent, invalid file or
directory */
;
```

### **Invalid Input Parameter Value Combination (IDNC)**

If a command has more than one input parameter, but the combination of values is not valid, the following error response is returned:

```
sid date time
M ctag DENY
  IDNC
/* Input, Data Not Consistent */
;
```

### **Missing Equipage (ENEQ)**

If the command failed due to equipage that is missing, the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped */
;
```

### **Insufficient File Space (ENEQ)**

If the command failed due to insufficient file space, the following error response is returned:

```
sid date time
M ctag DENY
  ENEQ
/* Equipage, Not Equipped, insufficient file space */
;
```

### **Incorrect Equipage (EATN)**

If the command failed due to incorrect equipage, the following error response is returned:

```
sid date time
M ctag DENY
  EATN
/* Equipage, not valid for Access Type, incorrect
equipage */
;
```

### **TID Mismatch in retrieved File (EATN)**

If the command failed due to a TID mismatch in a retrieved file, the following error response is returned:

```
sid date time
M ctag DENY
EATN
/* Equipage, Not Valid for Access Type, retrieved file
TID mismatch */
;
```

### **Product Mismatch (SRAC)**

If the command failed due to a product mismatch in the retrieved file, the following error response is returned:

```
sid date time
M ctag DENY
SRAC
/* Status, Requested Access Configuration is invalid,
retrieved file NE mismatch */
;
```

### **Failed Target Hardware (SSTP)**

If the command failed due to failed target hardware, the following error response is returned:

```
sid date time
M ctag DENY
SSTP
/* Status, Stopped, failed target hardware */
;
```

### **Command denied based on Mode, State or Status (SNVS)**

If the command is denied based on mode, state, or status, the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State */
;
```

### **Command denied based on Maintenance Condition (SNVS)**

If the command is denied based on the maintenance condition, the following error response is returned:

```
sid date time
M ctag DENY
```

```
SNVS
/* Status, Not in Valid State, maintenance condition */
;
```

### **Entity already exists (IEAE)**

If an entity already exists, the following error response is returned:

```
sid date time
M ctag DENY
IEAE
/* Input, Entity Already Exists */
;
```

### **Session is not initiated (PLNA)**

If a user issues a command before a session is initiated with ACT-USER, the following error response is returned:

```
sid date time
M ctag DENY
PLNA
/* Privilege, Login Not Active */
;
```

### **Command requires higher privilege (PICC)**

If a command requires a privilege higher than that of the user issuing the command, or for any other security-related problems, the following error response is returned:

```
sid date time
M ctag DENY
PICC
/* Privilege, Illegal Command Code */
;
```

### **System Initializing not completed (SNVS)**

If a command is not allowed because the system has not completed initializing, the following error response is returned:

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, system initializing */
;
```

### **System Limit exceeded (SARB)**

If the system is experiencing temporary exhaustion of allocated resources, the following error response is returned:

```
sid date time
M ctag DENY
SARB
/* Status, All Resources Busy, system limit exceeded */
;
```

### **Internal Limit exceeded (SSRE)**

If a command attempts to exceed an internal limit, the following error response is returned:

```
sid date time
M ctag DENY
SSRE
/* Status, System Resources Exceeded, allowed limit
exceeded */
;
```

### **Operation Failed (SROF)**

If the command cannot be completed due to system difficulties other than hardware or equipment, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed */
;
```

### **Processing Failed (SROF)**

If the command cannot be completed due to internal system processing problems, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, processing
failure */
;
```

### **Hardware Failed (SWFA)**

If the command failed because the control hardware is failed, missing, or initializing, the following error response is returned:

```
sid date time
M ctag DENY
SWFA
/* Status, Working unit Failed, control hardware
failed, missing or
initializing */
;
```

### **Communication Failure (SROF)**

If the command failed due to an external communications failure, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, external
communications
failure */
;
```

### **Generic not available (ENSG)**

If the command failed because the generic is not available, the following error response is returned:

```
sid date time
M ctag DENY
ENSG
/* Equipage, Not Software Generic, generic not
available */
;
```

### **Command Aborted (SABT)**

If a user or outside agent has aborted the command, the following error response is returned:

```
sid date time
M ctag DENY
SABT
/* Status, Aborted */
;
```

### Partial successful completion of a set of atomic commands

For provisioning commands (non-RTRV commands) that operate on a range of entities (e.g. AID range, or via an group alias) range as input, if the command succeeded on only a non-empty subset of the AIDs or another set of atomic commands, the following error response is returned for the AIDs or atomic commands that were not completed successfully. Note that the completion code is PRTL, not DENY.

```
      sid date time
M  ctag PRTL
   "aid"
   <error code>
   /* <error text> */
   "aid"
   <error code>
   /* <error text> */
   ...
   "aid"
   <error code>
   /* <error text> */
;
```

The error codes and error text fields are as defined in the other error responses above. If the command failed on all the AIDs, the completion code will be DENY, and there will only be a single error code and error text in the response.

### Partial completion on RTRV commands

For RTRV commands that take an AID range as input, if the command fails on a non-empty subset of the AIDs, and the failure is not related to filtering, the entire command will fail and one error response is returned. If the error is related to filtering, the command completes successfully but only the data that matches is returned.

If there is no data matching the filter criteria, the NE just responds with an empty reply.

For example, RTRV-OC48 with an all AID range for all the ports on a shelf will return the data for the existing OP2G5 circuit packs. RTRV-OC48 with a single AID of a non-OC48 port will fail.

If during the processing of a RTRV command which reports output responses for a number of AIDs an internal error occurs while the

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system has already started to send response data, the system does not terminate the output response with the ";" character.

This behavior will lead to a time-out of the manager and cause him to abort the command.

### Related TL1 messages

All other TL1 commands refer to the "RTRV-HDR: Retrieve header" (5-8) command for common requirements.

### Additional notes

#### Compliance of output parameter blocks with GR-833

For commands that have output parameter blocks, like the following one. The block may have optional trailing commas on a line.

```
sid date time
M ctag COMPLD
  "aid:<parameter block>"
  ...
;
```

#### AID grouping of output lines

For commands where the output has the AID prepended to each line, like this:

```
sid date time
M ctag COMPLD
  "aid:block"
  ...
;
```

If the parameters for the same AID value are on separate lines, those lines are grouped together.

#### spec\_blocks continued on another line

For commands that have spec\_blocks in the output, like this:

```
sid date time
M ctag COMPLD
  "aid:spec_block"
  ...
;
```

If the output line becomes too long, the keywords may be continued on another line, but the AID is repeated on the continuation line. In



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addition, the output lines are not limited to 80 characters, and there are no requirements as to how many parameters appear on a line.

Refer to the following example

```
RTRV-EQPT:UNITE-NE:system:123456;  
    UNITE-NE 00-11-03 08:00:00  
M 123456 COMPLD  
    "system:systype=LXC40"  
    "system:istddf1t=SDH"  
    "system:trbmddf1t=FIXED"  
    "system:syncrctc=SDH"  
;
```

**References** GR-833-CORE



## RTRV-ATTR-MSG: Retrieve attribute message

---

The RTRV-ATTR-MSG is used to retrieve the current status of the autonomous message reporting, which can be controlled via INH-MSG and ALW-MSG.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): M1  
                      Priority: 1  
                      Abortable: yes

**Input format**      Command Syntax: RTRV-ATTR-MSG:*tid::ctag*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format**      If the RTRV-ATTR-MSG request completes successfully, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
"sessions:msgstate"
. . .
;
```

For each value of parameter *sessions* one line is reported.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

1. sessions – Affected sessions  
This parameter specifies for which sessions the *msgstate* is applied.  
Type: alphanumeric value set.  
Range: CURRENT: affected session is the current session of the user who executed the command.  
Default: CURRENT
2. msgstate – Message status  
The current state of autonomous message reporting for *sessions*.  
Type: alphanumeric value set  
Range:
  - ON: autonomous reporting is enabled for *sessions*
  - OFF: autonomous reporting is disabled for *sessions*.Default: ON

### Detailed behavior description

The command retrieves the current status of the autonomous message reporting for all values of parameter *sessions*. Control of this state is via the commands INH-MSG and ALW-MSG.

When a user logs into the system via ACT-USER it is recommended to retrieve the status of autonomous reporting to check whether reporting is OFF for *sessions*=ALL.

### Example input/output

The following is an example of the RTRV-ATTR-MSG command:

```
RTRV-ATTR-MSG:LT-UNITE::123456;  
  LT-UNITE 00-11-15 08:00:00  
M 123456 COMPLD  
  "ALL:ON"  
  "CURRENT:OFF"  
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the INH-MSG command.

### Related TL1 messages

- “ALW-MSG: Allow message” (5-33)
- “INH-MSG: Inhibit message” (5-31)

System

RTRV-ATTR-MSG: Retrieve attribute  
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**References** GR-833-CORE



## INH-MSG: Inhibit message

---

The INH-MSG command instructs the NE to inhibit the forwarding of autonomous messages on the user session or per system (depending on parameter *sessions*). Autonomous messages are messages which are provided by the system itself without a trigger via the management interface (e.g. alarms, switch reports).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: no

**Input format** Command Syntax: INH-MSG-ALL:*tid::ctag*[::,,,*sessions*];  
The purpose of the commas in case the optional parameter *sessions* is present is that the format is compliant with non-supported position defined parameters in GR-833.

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. *sessions* – Affected sessions  
Refer to the definition of output parameter *sessions* in “RTRV-ATTR-MSG: Retrieve attribute message” (5-28).

**Output format** If the INH-MSG request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The command disables autonomous message reporting as specified by *sessions*.

If the user is logged in more than once, and *sessions*=CURRENT, only the current login session is affected by this command.

If the INH-MSG command inhibits autonomous messages that have already been suspended, it will complete successfully.

For *sessions*=CURRENT, the *atag* sequence will be reset to 000 when autonomous message are resumed.

The *atag* for a memory administration user is not affected by this command, see also “RTRV-AO: Retrieve Autonomous Output” (5-54).

**Example input/output**

The following is an example of the INH-MSG command:

```
INH-MSG-ALL:LT-UNITE::123456;  
    LT-UNITE 00-11-15 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the INH-MSG command.

**Related TL1 messages**

- “ALW-MSG: Allow message” (5-33)
- “RTRV-ATTR-MSG: Retrieve attribute message” (5-28)

**References**

GR-833-CORE



## ALW-MSG: Allow message

---

The ALW-MSG command allows the NE to resume the forwarding of autonomous messages previously suspended with the INH-MSG command.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: no

**Input format** Command Syntax: ALW-MSG-ALL:*tid::ctag*[::,,,*sessions*];  
The purpose of the commas in case the optional parameter *sessions* is present is that the format is compliant with non-supported position defined parameters in GR-833.

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. *sessions* – Affected sessions  
Refer to the definition of output parameter *sessions* in “RTRV-ATTR-MSG: Retrieve attribute message” (5-28).

**Output format** If the ALW-MSG request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

The command enables autonomous message reporting for *sessions*.  
If this command is executed when autonomous messages are already  
being transmitted, it is complete successfully.

**Example input/output**

The following is an example of the INH-MSG command:

```
ALW-MSG-ALL:LT-UNITE::123456;  
    LT-UNITE 00-11-15 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error  
responses section. The error responses listed there also apply to the  
ALW-MSG command.

**Related TL1 messages**

- “INH-MSG: Inhibit message” (5-31)
- “RTRV-ATTR-MSG: Retrieve attribute message” (5-28)

**References**

GR-833-CORE





## RTRV-ACTLCP: Retrieve acceptable circuit pack list

---

The RTRV-ACTLCP command returns all circuit packs (name and qualifier) which are supported in the system; i.e. there is at least one slot, where a circuit pack of that type is accepted to be provisioned/pre-provisioned.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-ACTLCP:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
 The aid of the system itself.  
 Type: AID  
 Range: system.
3. ctag – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-ACTLCP command, the following output report shall be returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

RTRV-ACTLCP: Retrieve acceptable circuit  
pack list

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

The output shall contain one line per supported circuit pack (name, qualifier pair).

## Output parameters

### Command parameters

1. aid – Access Identifier:  
See definition of *aid* input parameter in Input parameter section above.

### Spec block parameters

1. actlname – Acceptable Circuit Pack Name  
This parameter specifies the name of a circuit pack supported by system.  
Type: value set.  
Range: 12 character.
2. actlqual - Acceptable Circuit Pack Qualifier  
This parameter specifies the qualifier of a circuit pack supported by system.  
Type: value set.  
Range: 7 character.

Note: The TL1-representation of the functional qualifier shall follow the rules as defined in SRD\_ConfigurationManagement:

- alphanumeric characters or the special character '-' only
- special characters like '/' and '.' to be omitted.

## Example input/output

```
RTRV-ACTLCP:UNITE-NE:system:123456;
UNITE-NE 00-11-03 08:00:00
M 123456 COMPLD
"system:actlname=0P2G5,actlqual=13SR4"
"system:actlname=0P10,actlqual=15LR1"
...
;
```

## Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also pertain to the RTRV-ACTLCP command.

RTRV-ACTLCP: Retrieve acceptable circuit  
pack list

**Related TL1 messages**

- “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)
- “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)



## RTRV-STATE-EQPT (system): Retrieve equipment state

---

The RTRV-STATE-EQPT command retrieves the state information on system (NE) level.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-STATE-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
 The aid of the system itself.  
 Type: AID  
 Range: system; the usage of the keyword all on system level is not allowed.  
 Default: system
3. ctag – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** If the RTRV-STATE-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"system:spec_block"
...
...
"system:spec_block"
;
```

RTRV-STATE-EQPT (system): Retrieve equipment state

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

1. aid – Access Identifier  
See definition of *aid* input parameter in “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38).

### Spec block parameters

1. dbstate – Data Base Change State  
The system provides an indication of the validity of the active data base.  
Type: alphanumeric value set.  
Range:
  - EMPTY = data base state empty.
  - NEW = data base state new
  - VALID = database state valid
  - UNKNOWN = database state is not known.Default: UNKNOWN.
2. mcond – Maintenance Condition  
This parameter denotes whether the system condition is in maintenance condition or not.  
Type: alphanumeric value set.  
Range:
  - Y = maintenance mode
  - N = normal mode.

### Detailed behavior description

The RTRV-STATE-EQPT command on system level (AID = system) retrieves the current mode of the system.

The system provides the maintenance mode besides the normal operation mode in order to – handle error conditions the system can not autonomously manage – apply privileged commands.

RTRV-STATE-EQPT (system): Retrieve  
equipment state

In this maintenance mode acceptance of commands is restricted in the following way:

- commands allowed in maintenance AND normal mode:
  - get any provisionable parameter: any RTRV command
  - get any non-provisionable parameter: any RTRV command
  - set interface standard default mode: ED-EQPT (system)
  - set tributary default mode: ED-EQPT (system)
  - database download to restore empty/corrupt DB: CPY-MEM
  - set time: ED-DAT
  - set date: ED-DAT
  - set LAN parameter ENT-FECOM-LAN (note: restrictions depend on parameter base, details see command)
  - set IP parameter ENT-ULS (note: restrictions depend on parameter base, details see command).
- commands ONLY allowed in maintenance mode:
  - set TID
  - SET-SID
  - set SONET/SDH synchronization default mode: ED-EQPT (system)
  - leave maintenance mode (accept data base):  
ED-STATE-EQPT (system)
  - set IP addresses and subnet mask ENT-FECOM-LAN,  
ENT-ULS (note: restrictions depend on parameter base,  
details see command).

Accepting the database will be a direct result of leaving the maintenance mode.

The system autonomously leaves maintenance mode without accepting the data base after a data base download from the management interface.

The RTRV-STATE-EQPT command does not generate a REPT DBCHG message.

#### Example input/output

```
RTRV-STATE-EQPT:UNITE-NE:system:123456;  
UNITE-NE 00-11-03 08:00:00  
M 123456 COMPLD
```

RTRV-STATE-EQPT (system): Retrieve  
equipment state

```
"system:dbstate=EMPTY"  
"system:mcond=Y"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section.

**Related TL1 messages**

- “ED-STATE-EQPT (system): Edit equipment state” (5-42)
- “ED-EQPT (system): Edit equipment (system)” (5-49)
- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)



## ED-STATE-EQPT (system): Edit equipment state

---

The ED-STATE-EQPT command modifies the state information on system (NE) level.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
 Priority: 4  
 Abortable: no

**Input format** Command Syntax: ED-STATE-EQPT:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 See definition of *aid* input parameter in “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38).
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. *mcond* – Maintenance Condition  
 See definition of *mcond* in “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38).

**Output format** If the ED-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section for the RTRV-HDR command.



ED-STATE-EQPT (system): Edit equipment  
state

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Detailed behavior description</b> | <p>The command switches the system to the maintenance condition or back to normal condition. There is an autonomous system reset when the maintenance condition is left. The following attribute of the system entity is updated due to that operation:</p> <p><i>mcond</i> as specified in the command input.</p> <p>The modification is reported by means of an ED-STATE-EQPT notification for the system.</p> <p>Updated affected entities:</p> <p>Setting <i>mcond</i>=Y causes that <i>opstate</i>=OS_DISABLED for all non-CTL circuit packs in the system. The change is reported by means of an ED-STATE-EQPT notification for the circuit pack.</p> |
| <b>Example input/output</b>          | <pre>ED-STATE-EQPT:LT-UNITE:system:123456:::mcond=y;<br/>    LT-UNITE 00-11-14 08:00:00<br/>M 123456 COMPLD<br/>;</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Error responses</b>               | <p>Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-STATE-EQPT command.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Related TL1 messages</b>          | <p>“RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



## ED-STATE-EQPT (system) notification

---

**Output format** The ED-STATE-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STATE-EQPT:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* - Access Identifier  
See definition of *aid* input parameter in “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38).

#### Spec block parameters

1. *dbstate* – Data Base Change State  
See definition of parameter *dbstate* in “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38).
2. *mcond* – Maintenance Condition  
See definition of parameter *mcond* in “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38).

**Example output**

```
ED-STATE-EQPT:LT-UNITE:system:123456:::mcond=n;
LT-UNITE 00-11-14 08:00:00
M 123456 COMPLD
;
LT-UNITE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-STATE-EQPT:system::mcond=N"
;
```



## RTRV-EQPT (system): Retrieve Equipment (system)

---

The RTRV-EQPT command retrieves the provisioning information on system (NE) level.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
The aid of the system itself.  
Type: AID  
Range: system. The usage of the keyword all on system level is not allowed.  
Default: system
3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-EQPT command, the following output report is returned:

```
sid date time
M ctag COMPLD
"system:spec_block"
...
...
"system:spec_block"
;
```

RTRV-EQPT (system): Retrieve Equipment  
(system)

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

1. aid – Access Identifier  
See definition of the input parameters *aid* in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45) .

## Spec block parameters

1. eqptpn – Equipment ASAP Profile Name  
The name of the current ASAP profile on the system level  
Type: Alphanumeric string  
Range: up to 24 characters. A hyphen (-) is additionally allowed in the name.  
Default: DEFAULT
2. istddflt – Interface Standard Default  
Defining the predominantly used interface standard for a port.  
Type: alphanumeric value set  
Range:
  - SONET
  - SDHDefault: SDH
3. trbmddflt – Tributary Mode Default  
Defining the predominantly used tributary mode for a port.  
Type: alphanumeric value set.  
Range:
  - FIXED
  - ADAPTIVEDefault: FIXED.
4. swmaxcap – Maximum Switch Capacity  
This parameter indicates the maximum switch capacity of the system that the user intends to use.  
Type: value set.  
Range:
  - LXC160 (default), 160 GBit/s switch capacity
  - LXC320, 320 GBit/s switch capacity.

RTRV-EQPT (system): Retrieve Equipment  
(system)

5. syncrtc – System Synchronization Characteristic  
This parameter specifies whether the NE uses the SDH or SONET timing function for synchronization.  
Type: alphanumeric value set.  
Range:  
  - SONET
  - SDH.
Default: SDH.
6. systype – System Type  
This parameter specifies the type of NE.  
Type: alphanumeric value set.  
Range: WaveStar\_UNITE.  
Default: WaveStar\_UNITE
7. xcsetup – Cross Connect Setup  
This parameter indicates whether the system supports the set-up of cross-connections via the ONNS application.  
Type: value set.  
Range: SWISS ONNS application is enabled; TRADITIONAL ONNS application is disabled.  
Default: TRADITIONAL.

**Detailed behavior  
description**

The command retrieves the parameters as indicated in the output parameter section from the system.

**Example input/output**

```
RTRV-EQPT:UNITE-NE:system:123456;
UNITE-NE 00-11-03 08:00:00
M 123456 COMPLD
"system:systype=WaveStar_UNITE"
"system:istddflt=SDH"
"system:trbmddflt=FIXED"
"system:syncrtc=SDH"
"system:eqtpn=DEFAULT"
;
```

**Error responses**

Refer to "RTRV-HDR: Retrieve header" (5-8) command Error Response section. The generic error responses listed there also apply to the RTRV-EQPT command.

RTRV-EQPT (system): Retrieve Equipment  
(system)

**Related TL1 messages**

- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)
- “ED-EQPT (system): Edit equipment (system)” (5-49)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38)

**References** GR-199-CORE



## ED-EQPT (system): Edit equipment (system)

---

The ED-EQPT command modifies the provisioning values associated with system (NE) level.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**      Command Syntax: ED-EQPT:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of the input parameters *aid* in RTRV-EQPT (system).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *eqptpn* – Equipment ASAP Profile Name  
       See definition of *eqptpn* output parameter in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).
2.    *istddflt* – Interface Standard Default  
       See definition of *istddflt* output parameter in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).
3.    *syncrtc* – System Synchronization Characteristic  
       See definition of *syncrtc* output parameter in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).
4.    *trbmddflt* – Tributary Mode Default  
       See definition of *trbmddflt* output parameter in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).

ED-EQPT (system): Edit equipment  
(system)

5. *swmaxcapp* – Maximum Switch Capacity  
See definition of *swmaxcap* output parameter in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).
6. *xcsetup* – Cross Connect Setup  
See definition of *xcsetup* output parameter in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).

**Output format** If the ED-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

The command modifies the current values for the system.

The following attributes of the system entity is updated due to that operation:

1. *istddflt* as specified in the command input
2. *trbmddflt* as specified in the command input
3. *syncrtc* as specified in the command input
4. *eqtpn* as specified in the command input.

Change of the parameters *istddflt*, *trbmddflt* has no effect on the corresponding parameters for existing entities on port and tributary level, but only on entities which are created afterwards.

The modification is reported by means of an ED-EQPT notification for the system.

**Dependencies *istddflt* and *trbmddflt***

If *istddflt* is changed to SDH the *trbmddflt* parameter is set to FIXED by the system.

**Updated affected entities**

See discussion in Chapter 10, “TL1 messages - synchronization” after change of *syncrtc* and leave of MCOND.



### Behaviour when setting *swmaxcap*

The command modifies the maximum switch capacity of the system. No other entities of the system will be affected. The modification is reported by means of an ED-EQPT notification for the system.

### Example input/output

```
ED-EQPT:UNITE-NE:system:123456:::istddflt=SONET;  
    UNITE-NE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ENT-EQPT command.

### Validation rule: check of the maintenance condition

System must be in MCOND for change of *syncrtc*.

Error code: SNVS - Status, Not in Valid State, not in Maintenance Condition

### Validation rule: compatibility *istddflt* and *trbmddflt*

Change of *trbmddflt* to ADAPTIVE while *istddflt*= SDH is not allowed.

Error code: SNVS - Status, Not in Valid State, incompatibility *istddflt* and *trbmddflt*

### Validation rule: Maximum switch capacity according XC CP

If the *swmaxcap* parameter is set it shall be ensured that the provided switch capacity is not higher than the switch capacity of the provisioned XC circuit pack with the smallest switch capacity in the system.

Error Code: SNVS - Status, Not in Valid State, switch capacity below provisioned XC CP switch capacity

### Validation rule: No decrease of maximum switch capacity

If the *swmaxcap* parameter is set it shall be ensured that the *swmaxcap* value in the ED-EQPT command is not lower than the actual provisioned *swmaxcap* value in the system.

Error Code: IDNV - Input, Data Not Valid, switch capacity cannot be decreased

ED-EQPT (system): Edit equipment  
(system)

**Related TL1 messages**

- “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38)

**References** GR-199-CORE



## ED-EQPT (system) notification

---

**Output format** The ED-EQPT notification uses the general format of a REPT DBCHG Report Database Change notification.

Syntax: ED-EQPT:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of the input parameters *aid* in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).

#### Spec block parameters

See definition of the output parameters *eqptpn*, *istddflt*, *syncrtc*, *trbmddflt*, *swmaxcap* and *xcsetup* in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).

**Example output**

```
ED-EQPT:UNITE-NE:system:123456:::istddflt=SONET;
    UNITE-NE 00-11-14 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-14 08:00:50
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-14:ED-EQPT:system::
    istddflt=SONET"
;
```



## RTRV-AO: Retrieve Autonomous Output

---

The RTRV-AO command is used to retrieve copies of past REPT DBCHG messages for users in the memory administration user class.

The copies of REPT DBCHG messages available for retrieval include those actually reported to the user as well as those that may not have reached the user due to external (for example, DCN failures) or internal (for example, inhibited autonomous TL1 message reporting) conditions.

If messages are inhibited with the INH-MSG command, the internal buffering of autonomous messages is unaffected.

The system saves a copy of each REPT DBCHG message for users in the memory administration user class (*uidclass*=MEMADMIN). Those copies share one *atag* counter for all users of the memory administration user class. Message is saved even if no user of the memory administration user class is actually logged into the system.

This is in contrast to the autonomous messages which are sent to users of user classes different from memory administration, where the *atag* counter is available per user session.

**Properties**

Login Privilege: User Privilege Code (UCFC/UCAL): S1

User Class: The user must belong to the user class *uidclass*=MEMADMIN (see “RTRV-USER: Retrieve user” (4-30)).

Priority: 1

Abortable: Yes

**Input format** Command Syntax: RTRV-AO:*tid*::*ctag*[::*spec\_block*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of *tid* in “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

### Spec block parameters

1. atagseq – ATAG Sequence

This parameter specifies one or more *atags* for which the REPT DBCHG messages is retrieved from the log.

Examples of ranges that are allowed:

- *atagseq*=10 → Retrieve *atag* message 010
- *atagseq*=10&20 → Retrieve *atag* message 010, 020
- *atagseq*=10&&20 → Retrieve *atag* message 010-020
- *atagseq*=999&&1 → Retrieve *atag* message 999, 000, 001.

If the value is omitted, all messages are retrieved, regardless of *atag*.

Type: (range of) numeric string.

Examples of ranges that are allowed:

- *atagseq*=10 Retrieve REPT DBCHG message with *atag* 010
- *atagseq*=10&20 Retrieve REPT DBCHG message with *atag* s 010, 020
- *atagseq*=10&&20 Retrieve REPT DBCHG message with *atag* s 010-020
- *atagseq*=999&&1 Retrieve REPT DBCHG message with *atag* s 999, 000, 001.

Range: 0 .. 999

Default: *null*, if the value is omitted, all messages are retrieved, regardless of *atag*.

2. msgtype – Message Type

Retrieve only atag messages of this specific type.

Type: alphanumeric value set

Range: DBCHG: Retrieve messages reported by REPT DBCHG.

Default: *null*, if the value is omitted, only DBCHG messages are retrieved.

### Output format

If there are autonomous messages to report, the following response is returned:

```
sid date time
M ctag COMPLD
/*
complete autonomous messages without the termination
indicator (";")
*/
;
```

## RTRV-AO: Retrieve Autonomous Output

**Sorting**

If more than one REPT DBCHG message is returned, the output is sorted by ascending time order. If the system clock is reset, the output is sorted in the order in which the messages were stored into the log.

For example, if the system originally sent messages 998 through 001, and the user requests those messages, the *atag* numbers in the output will be in the order: 998, 999, 000, 001.

If the *atag* numbers have wrapped and the most recent entry is *atag* 040, and if the user requests *atagseq*=38&&43, the *atag* order in the output will be 041, 042, 043, 038, 039, 040.

**Output parameters**

The output parameters reflect the autonomous messages that are retrieved from the database change log, see “RTRV-LOG-NTFCN: Retrieve notification Log” (5-58), in the format of a REPT DBCHG message.

**Detailed behavior description**

The system returns all REPT DBCHG messages matching the *atag* range of the input parameter *atagseq* to the user.

Update affected entities: Execution of this command does not affect other entities in the system.

**Example input/output**

The following is an example of the successful execution of a RTRV-AO command:

```
RTRV-AO:LT-UNITE:12:123456;
      LT-UNITE 00-11-01 08:00:00
M 123456 COMPLD
/*
      LT-UNITE 00-11-01 07:50:00
A 012 REPT DBCHG
      "DATE=00-11-01,TIME=07-49-58:ED-NE:::tunstat=ENABLE"
*/
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error Response section. The error responses listed there also apply to the RTRV-AO command.

## RTRV-AO: Retrieve Autonomous Output

**Validation rule: valid *atagseq***

If the NE receives a RTRV-AO command with an invalid *atagseq* value the command is rejected with

Error code: IDNV - Input Data Not Valid, invalid *atagseq*

**Validation rule: user class**

If the NE receives a RTRV-AO command from a user that is not in the memory administration user class, i.e. *uidclass*=MEMADMIN, the command is rejected with

Error code: PICC - Privilege, Illegal Command Code, invalid user class.

**Related TL1 messages**

- “RTRV-LOG-NTFCN: Retrieve notification Log” (5-58)
- “REPT DBCHG: Report data base change” (5-62)

**References** GR-199-CORE

## RTRV-LOG-NTFCN: Retrieve notification Log

---

The RTRV-LOG-NTFCN command retrieves the notification log, which is used to store the most recent notification reported via REPT DBCHG. This log allows the user to see the most recent activity that has caused updates to the system database. This is useful in solving database audit problems. This information can also be used to re-synchronize a management system with the NE after a communications outage between the two.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax:  
RTRV-LOG-NTFCN:*tid::ctag::[startdate],[starttime],[replytype]*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. *startdate* – Date for the Starting point  
The format is YY-MM-DD. If both *startdate* and *starttime* are omitted, the entire log is retrieved. Both *startdate* and *starttime* must be specified, or both must be omitted.  
Type: value set.



Range:

- for YY: 00 to 99
- for MM: 01 to 12
- for DD: 01 to 31.

2. starttime – Time for the Starting point

The format is HH-MM-SS. If both *startdate* and *starttime* are omitted, the entire log is retrieved. Both *startdate* and *starttime* must be specified, or both must be omitted.

Type: value set.

Range:

- for HH: 00 to 23
- for MM: 00 to 59
- for SS: 00 to 59.

3. replytype – Type of Reply

BROWSE is used if user browsing is needed. If the requested *startdate* and *starttime* is in the log, those entries and any subsequent log entries are returned. If the requested *startdate* and *starttime* is NOT in the log, the first log entry in the log with a timestamp later than the *startdate* and *starttime* plus subsequent log entries will be returned. If the requested *startdate* and *starttime* is NOT in the log only a completion message is returned without further error messages.

DBSYNC is used if the management system requires the log for database synchronization. If the requested *startdate* and *starttime* is in the log, those entries and any subsequent log entries are returned. If the requested *startdate* and *starttime* is NOT in the log, an SNVS error response is returned.

Type: alphanumeric value set.

Range:

- BROWSE
- DBSYNC.

Default: BROWSE.

### Output format

If the RTRV-LOG-NTFCN request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"Time=time,Date=date:[ccb]:[aid]:[com_block]:[spec_
block]"
```

```

...
"Time=time,Date=date:[ccb]:[aid]:[com_block]:[spec_
block]"
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

1. date – Date  
See definition of *chgdat* parameter in “REPT DBCHG: Report data base change” (5-62).
2. time – Time  
See definition of *chgtm* parameter in “REPT DBCHG: Report data base change” (5-62).
3. ccb – Command Block Code  
See definition of *ccb* parameter in “REPT DBCHG: Report data base change” (5-62).
4. aid – Access Identifier  
See definition of *aid* parameter in “REPT DBCHG: Report data base change” (5-62).
5. com\_block – Common Block  
See definition of *com\_block* in “REPT DBCHG: Report data base change” (5-62).
6. spec\_block – Specific Block  
See definition of *spec\_block* in “REPT DBCHG: Report data base change” (5-62).

**Example input/output** The following is an example of the RTRV-LOG-NTFCN command:

```

RTRV-LOG-NTFCN:LT-UNITE::123456::;
LT-UNITE 00-11-15 08:00:00
M 123456 COMPLD
"TIME=07-59-59,DATE=00-11-15:ENT-EQPT:1-1::shlftp=DUR"
...
;

```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-LOG-NTFCN command.

**Validation rule: matching log entry**

There is at least one matching log entry for the specified *startdate* and *starttime* if reply type equals DBSYNC.

Error code: SNVS - Status, Not in Valid State, no matching log entry

**Related TL1 messages** “REPT DBCHG: Report data base change” (5-62)

**References** GR-833



## REPT DBCHG: Report data base change

---

The REPT DBCHG message reports any change in the system database.

**Output format** The REPT DBCHG message uses the following format:

```

sid date time
A atag REPT DBCHG
  "TIME=chgtm,DATE=chgdatt:ccb:[aid]:[com_block]:[spec_
  block]"
  ...
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

1. atag – Automatic Tag  
The *atag* is used for message sequencing. The *atag* is available per user session. The number is incremented by one for each autonomous message, and the messages are transmitted to the user in that same order.  
Type: decimal number.  
Range: 0 to 999.  
Default: 0
2. chgtm – Change Time  
Time when the change is occurred.  
Type: value set.  
Range: HH-MM-SS.
3. chgdatt – Change Date  
Date when the change occurred  
Type: value set  
Range: YY-MM-DD
4. ccb – Command Code Block  
This field will be set to the TL command that causes that database change. The *com\_block* and *spec\_block* fields will be set according to the parameters that changed.  
Type: alphanumeric value set verb-modifier[-modifier] (see “TL1 message index” (1-2)).

## REPT DBCHG: Report data base change

5. aid – Access Identifier  
AID of the entity for which the change is reported  
Type: AID.  
Range: As defined by the *aid* input parameter of the corresponding command, defined by *ccb*.
6. com\_block – Common Block  
This is a position-defined field. If the database change is the result of a TL1 command which contains parameters in this block, the parameter values are included in this block in the same order as the corresponding TL1 command.  
As exception to this rule are some commands in the protection fragment, where the aliases *rid* and *ppgname* are not reported in the REPT DBCHG notification.  
Type: As defined in the input *com\_block* of the corresponding command, defined by *ccb*.  
Range: As defined in the input *com\_block* of the corresponding command, defined by *ccb*.  
Default: As defined in the input *com\_block* of the corresponding command, defined by *ccb*.
7. spec\_block – Specific Block  
This is a name-defined field. If the database change is the result of a TL1 command which contains parameters in this block, the parameter names and values are included in this block.  
parameters within the specific block are positionally independent and are specified using a name-defined construct of *parameter=value* in a comma-separated list. The parameter names are the same as those for the corresponding TL1 command.  
Type: As defined in the input *spec\_block* of the corresponding command, defined by *ccb*.  
Range: As defined in the input *spec\_block* of the corresponding command, defined by *ccb*.  
Default: As defined in the input *spec\_block* of the corresponding command, defined by *ccb*.

**Detailed behavior description**

The REPT DBCHG message reports any change in the system database. Changes can be caused by a TL1 user or by an internally-generated state change.

Changes in user provisionable attributes are reported as the equivalent TL1 command that would cause that change.

**REPT DBCHG: Report data base change**

This also means, that e.g. for an ED command the REPT DBCHG message will contain those parameters as specified in the corresponding TL1 command, regardless of whether the command led to an actual change of the attribute or not.

Changes in non-user provisionable attributes are reported using only the AID and the block parameters, i.e. leaving the *ccb* parameter empty.

**System initialization**

Any time a command is entered that causes a system reset, a REPT DBCHG message is transmitted before the system resets.

**AID ranges**

If a database change occurs as a result of a TL1 command in which an AID range is entered, the system responds separate REPT DBCHG messages for each affected AID.

**Messages caused by own changes**

If the database change occurs as a result of a TL1 command, a REPT DBCHG message is transmitted to users provisioned to receive REPT DBCHG messages, including the user which issued the command.

**Example input/output**

The following is an example of the REPT DBCHG command:

```
UNITE-NE 00-11-08 08:00:00
A 001 REPT DBCHG
"TIME=07-59-59,DATE=00-11-08: ENT-EQPT:1-1-#-#-
05::nvmname=OP2G5,nvmqual=13SR4"
;
```

**References**

GR-199-CORE



## ED-DAT: Edit date and time

---

The ED-DAT command can be initiated by a user to change the date and time information in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: no

**Input format** Command Syntax: ED-DAT:*tid*::*ctag*::[*date*][,*time*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. *date* – Date  
The *date* specifies the current date as YY-MM-DD. If the parameter *time* is not specified, the current value is not changed, but then *date* must be specified for the ED-DAT command to complete successfully.  
Type: value set.  
Range: YY-MM-DD, with YY between 00 and 99, MM between 01 and 12, DD between 01 and 31.  
Default: 00-01-01 after start-up with default DB, current NE value, if not supplied in the command.
4. *time* – Time  
The *time* specifies the current time of day as HH-MM-SS. If the parameter *date* is not specified, the current value is not changed, but then *time* must be specified for the ED-DAT command to complete successfully.  
Type: value set.  
Range: HH-MM-SS, with HH between 00 and 23, MM between 00 and 59, SS between 00 and 59.  
Default: 00-00-00 after start-up with default DB current NE value, if not supplied in the command.

**Output format** If the ED-DAT request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The following attributes of the system entity is updated due to that command

1. *date* as specified in the command input
2. *time* as specified in the command input.

If either *date* or *time* is not supplied in the command parameter, this value is left unchanged.

The update is reported by means of an ED-DAT notification for the system.

**Update affected entities**

If ED-DAT is changed so that a performance monitoring period is crossed, than one history bin will be lost. In every case the *validity* parameter is modified accordingly (see “RTRV-PM: Retrieve performance monitoring” (9-7)).

**Example input/output**

```
ED-DAT:LT-UNITE:789::123456::01-12-31,11-50-30;
LT-UNITE:789 01-12-31 11:51:41
M 123456 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-DAT command.

**Validation rule: Incorrect date/time format**

If the NE receives an ED-DAT command with an incorrectly formatted date and/or time, the following error response is returned. This check includes checks for invalid days within a month (e.g. no 30th February).



ED-DAT: Edit date and time

Error code: IDNV - Input, Data Not Valid, incorrect  
date/time format

**Related TL1 messages**    “RTRV-HDR: Retrieve header” (5-8)

**References**    GR-199-CORE



## ED-DAT notification

---

**Output format** The ED-DAT notification uses the general format of a REPT DBCHG Report Database Change notification.

Syntax: ED-DAT::*[date]**[,time]*

### Output parameters

#### Command parameters

1. **date** – Date  
See definition of input parameter *date* in “ED-DAT: Edit date and time” (5-65).
2. **time** – Time  
See definition of input parameter *time* in “ED-DAT: Edit date and time” (5-65).

**Example output**

```
ED-DAT:LT-UNITE:789::123456::01-12-31,11-50-30;  
LT-UNITE:789 01-12-31 11:51:41  
M 123456 COMPLD  
;  
LT-UNITE 01-12-31 11:52:03  
A 078 REPT DBCHG  
"Time=11-52-05,DATE=01-12-31:ED-DAT:::date=01-12-  
31,time=11-50-30"  
;
```



## SET-SID: Set SID

---

SET-SID is used to change the target/source identification of the NE. The SET-SID command is denied if the system is not in maintenance condition.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: no

**Input format** Command Syntax: SET-SID:*tid*::*ctag*::*newsid*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command.
3. *newsid* – New Target/Source Identification  
This is the new name of the NE. Future commands must use this name instead of the current name.  
See definition of input parameter *tid* in “RTRV-HDR: Retrieve header” (5-8).

**Output format** If the NE fully complies with the SET-SID request, the normal completion response is returned as shown below:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

This command provides a new name to the NE.  
The update is reported by means of an SET-SID notification.

The SET-SID command is denied if the system is not in maintenance condition. Maintenance condition applies only to NE.

The new SID will come into effect only after reset of the CTL. This reset takes place autonomously when the maintenance condition is left. Commands after the reset must use the new SID instead of the current name.

The response as well as corresponding REPT DBCHG notification use the old SID in the *sid* parameter.

The SET-SID command generates a REPT DBCHG message.

#### **Updated affected entities**

There is no further entities affected.

If the NE is a node in a BLSR ring/MS-SPRing and the TID is changed, then this may impact cross-connection entities of ring neighbors. Since these updates are reported by NEs not addressed in the command request, these events are treated like autonomous events. For further details see corresponding section in the transmission chapter – entity cross-connection.

#### **Example input/output**

The following shows an example of the SET-SID command where the target/source identification of the NE was changed to HARRY:

```
SET-SID:LT-UNITE::123456::HARRY;  
    LT-UNITE 00-11-15 08:00:00  
M 123456 COMPLD  
;
```

#### **Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the SET-SID command.

#### **Validation rule: Check of Maintenance Condition**

If a SET-SID command is entered when the administrative state of the system is not in maintenance condition, the following error response is returned.

**Error code:** SNVS - Status, Not in Valid State, not in Maintenance Condition

**Validation rule: Uniqueness of TID within Ringmaps**

If the new sid conflicts with an existing TID in at least one of the valid ringmaps, the following error response is returned.

Error code: IDNV - Input, Data Not Valid, sid is already used by another BLSR/MS-SPRing Node

**Related TL1 messages**    “RTRV-HDR: Retrieve header” (5-8)

**References**    GR-833-CORE, “Surveillance Messages”



## SET-SID notification

---

**Output format** The SET-SID notification uses the general format of a REPT DBCHG Report Database Change notification.

Syntax: SET-SID::*newsid*

### Output parameters

#### Command parameters

1. *newsid* – New Target/Source Identification  
See definition of input parameter *tid* in “RTRV-HDR: Retrieve header” (5-8).

**Example output**

```
SET-SID:LT-UNITE::805::HARRY;  
LT-UNITE 00-11-17 10:11:00  
M 805 COMPLD;  
LT-UNITE 00-11-17 10:12:03  
A 610 REPT DBCHG  
Time=13-49-30,DATE=00-11-17:SET-SID::HARRY"  
;
```



## INIT-SYS: Initialize System

---

The INIT-SYS command results in a full reset of all circuit packs that are present in the system. The initialization is equivalent to power cycle reset of the whole system.

The INIT-SYS command is traffic affecting.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: no

**Input format** Command Syntax: INIT-SYS:*tid*::*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** If the NE fully complies with the INIT-SYS request, the following normal completion response is returned to indicate the initialization has been started:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

The INIT-SYS command does not generate a REPT DBCHG message. There are no unique state change notifications associated with the INIT-SYS command. There are, however, all the state change notifications associated with the subsequent restart of all CTIPs. This

includes multiple state change messages. Refer to autonomous notifications because of state changes.

**Example input/output** The following is an example for the INIT-SYS command:

```
INIT-SYS:LT-UNITE::123456;  
    LT-UNITE 00-11-16 08:00:00  
M 123456 COMPLD  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to INIT-SYS command.

**Related TL1 messages** “INIT-EQPT (slot): Initialize equipment (slot)” (5-124)

**References** GR-833-CORE





## Autonomous notifications

---

### Change acceptable type list for CTL

During system startup it shall be detected which CTL type is plugged in.

Appropriate to this CTL the acceptable type list of the second controller slot shall be changed

- If the first controller is a CTL, the second controller can be CTL or CTL/2
- If the first controller is a CTL/2, the second controller must be CTL/2.

The term *first* and *second* is related on installation time. No database change notification will be send out during system initialization.

### Change of the data base change status

The data base change state (see *dbstate* parameter in “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38)) can change autonomously. This change is reported by means of an ED-STATE-EQPT notification.

### System start-up with default DB

The system autonomously create the entity *system* when starting up with the default database. No notification is sent.

### Change of system switch capacity

The switch capacity of the system can change if a cross connect circuit pack will be auto provisioned with a higher switch capacity as currently defined for the system. The system switch capacity will change to the cross-connect circuit pack switch capacity. This shall be reported by means of an ED-EQPT notification reporting the *swmaxcap* parameter.

□

# Bay

## Overview

---

**Purpose** This section includes the bay level configuration messages.

**Contents**

|                                           |                      |
|-------------------------------------------|----------------------|
| RTRV-EQPT (bay): Retrieve Equipment (bay) | <a href="#">5-77</a> |
| Autonomous notifications                  | <a href="#">5-79</a> |

## RTRV-EQPT (bay): Retrieve Equipment (bay)

---

The RTRV-EQPT command retrieves information associated with the bay level.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
Description: The AID of the bay/rack.  
Type: AID.  
Range: BayAID. The keyword `all` is allowed.  
Default: 1.
3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-EQPT command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

Bay  
RTRV-EQPT (bay): Retrieve Equipment  
(bay)

### **Output parameters**

#### **aid – Access Identifier**

Description: The AID of the bay/rack.

Type: AID

Range: BayAID. The keyword all is not allowed as output parameter.

Default: 1

### **Detailed behavior description**

The system supplies a normal completion response with the AID of the bay/subrack.

### **Example input/output**

```
RTRV-EQPT:UNITE-NE:1:123456;  
    UNITE-NE 00-11-03 08:00:00  
M 123456 COMPLD  
    "1"  
;
```

### **Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to RTRV-EQPT (bay) command.

### **References**

GR-199-CORE



## Autonomous notifications

---

**System start-up with  
default DB**

The system autonomously create the entity ***bay*** when starting up with the default database. No notification is sent.



# Shelf

## Overview

---

**Purpose** This section includes the shelf level configuration messages.

**Contents**

|                                               |                      |
|-----------------------------------------------|----------------------|
| RTRV-EQPT (shelf): Retrieve Equipment (shelf) | <a href="#">5-81</a> |
| ED-EQPT (shelf): Edit equipment (shelf)       | <a href="#">5-84</a> |
| ED-EQPT (shelf) notification                  | <a href="#">5-86</a> |
| Autonomous notifications                      | <a href="#">5-87</a> |



## RTRV-EQPT (shelf): Retrieve Equipment (shelf)

---

The RTRV-EQPT command retrieves the provisioning information associated with the shelf level.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P1  
                      Priority: 1  
                      Abortable: Yes

**Input format**      Command Syntax: RTRV-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1.    tid – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    aid – Access Identifier  
       The AID of the shelf/subrack.  
       Type: AID  
       Range: ShelfAID. The keyword all is allowed on bay AID and shelf AID level.  
       Default: 1-1.
3.    ctag – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format**      In response to a valid RTRV-EQPT command, the following output report is returned:

```

sid date time
M ctag COMPLD
"1-1[:spec_block]"
...
...
"1-1[:spec_block]"
;
```

RTRV-EQPT (shelf): Retrieve Equipment  
(shelf)

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

1. aid – Access Identifier  
The AID of the shelf/subrack.  
Type: AID  
Range: ShelfAID. The keyword all is not allowed on bay AID and shelf AID level.  
Default: 1-1.

### Spec block parameters

1. eqtpn – Equipment ASAP Profile Name  
The name of the current ASAP profile of type EQUIP-UNPROT of the shelf level.  
Type: Alphanumeric string.  
Range: up to 24 characters. A hyphen (-) is additionally allowed in the name.  
Default: DEFAULT.
2. eqtprotpn – Protected Equipment ASAP Profile Name  
The name of the current ASAP profile of type EQUIP-PROT of the shelf level.  
Type: Alphanumeric string.  
Range: up to 24 characters. A hyphen (-) is additionally allowed in the name.  
Default: DEFAULT.
3. shlftp – Shelf Type  
The shelf type of the addressed NE is provided.  
Type: alphanumeric value set  
Range: LXC40.  
Default: none.
4. ssoride - SS Bits Overrides  
This parameter determines the value to be inserted into the SS bits of the pointer of every AU-N or STS-N signal in the output direction of every SDH or SONET port in the shelf.



RTRV-EQPT (shelf): Retrieve Equipment  
(shelf)

The terms *override*, *enable* and *disable* are used since:

- the default value of the SS bits in 00
- the parameter allows you to diverge from that default.

Type: alphanumeric value set.

Range: ENABLE insert value 00 into SS bits, DISABLE insert value 10 into SS bits.

Default: DISABLE.

#### Detailed behavior description

The system retrieves the output parameters as described above.

The shelf type is derived from the inventory data of the subrack.

#### Example input/output

```
RTRV-EQPT:UNITE-NE:1-1:123456;
    UNITE-NE 00-11-03 08:00:00
M 123456 COMPLD
    "1-1:eqtpn=DEFAULT,eqtprotn=DEFAULT,shlftp=LXC40"
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to RTRV-EQPT (shelf) command.

#### Related TL1 messages

- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)
- “ED-EQPT (shelf): Edit equipment (shelf)” (5-84)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38)

#### References

GR-199-CORE



## ED-EQPT (shelf): Edit equipment (shelf)

---

The ED-EQPT command modifies the provisioning values associated with the shelf.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: no.

**Input format** Command Syntax: ED-EQPT:*tid:aid:ctag:::spec\_block;*

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).
3. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. eqtpn – Equipment ASAP Profile Name  
See definition of output parameter *eqtpn* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).
2. eqtprotn – Protected Equipment ASAP Profile Name  
See definition of output parameter *eqtprotn* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).
3. ssoride – SS Bits Override  
See definition of output parameter *ssoride* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).

**Output format** If the ED-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
```

;

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The following attribute of the shelf entity is updated due to the command ED-EQPT:

- *eqtpn* as specified in the command input
- *eqtprotn* as specified in the command input.

The modification is reported by means of an ED-EQPT notification for the shelf.

**Example input/output**

```
ED-EQPT:UNITE-NE:1-1:123456:::eqtpn=Nuernberg-1;  
    UNITE-NE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to RTRV-EQPT (shelf) command.

**Validation rule: Check for ASAP profile existence**

When no ASAP profile with the name specified by *eqtpn* or *eqtprotn* does exist the following error message is returned.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Related TL1 messages**

- “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “RTRV-STATE-EQPT (system): Retrieve equipment state” (5-38)

**References**

GR-199-CORE



## ED-EQPT (shelf) notification

---

**Output format** The ED-EQPT notification uses the general format of a REPT DBCHG Report Database Change notification.

Syntax: ED-EQPT:*aid::spec\_block*

### Output parameters

#### Command parameters

1. **aid** – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).

#### Spec block parameters

1. **eqtpn** – Equipment ASAP Profile Name  
See definition of output parameter *eqtpn* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).
2. **eqtprotn** – Protected Equipment ASAP Profile Name  
See definition of output parameter *eqtprotn* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).
3. **ssoride** – SS Bits Override  
See definition of output parameter *ssoride* in “RTRV-EQPT (shelf): Retrieve Equipment (shelf)” (5-81).

**Example output**

```
ED-EQPT:UNITE-NE:1-1:123456:::eqtpn=Nuernberg-1;
    UNITE-NE 00-11-20 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-20 8:01:03
A 610 REPT DBCHG
    "Time=8-00-30,DATE=00-11-20:ED-EQPT:1-1::
    eqtpn=Nuernberg-1"
;
```



## Autonomous notifications

---

**System start-up with  
default DB**

The system autonomously create the entity ***shelf*** when starting up with the default database. No notification is sent.



# Slot

## Overview

---

**Purpose** This section includes the slot level configuration messages.

**Contents**

|                                                         |                       |
|---------------------------------------------------------|-----------------------|
| RTRV-EQPT (slot): Retrieve Equipment (slot)             | <a href="#">5-89</a>  |
| ENT-EQPT (slot): Enter equipment (slot)                 | <a href="#">5-95</a>  |
| ED-EQPT (slot): Edit equipment (slot)                   | <a href="#">5-104</a> |
| ED-EQPT notification                                    | <a href="#">5-108</a> |
| DLT-EQPT (slot): Delete equipment (slot)                | <a href="#">5-112</a> |
| RTRV-STATE-EQPT (slot): Retrieve equipment state (slot) | <a href="#">5-120</a> |
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## RTRV-EQPT (slot): Retrieve Equipment (slot)

---

The RTRV-EQPT command retrieves the provisioning information associated with slot.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
The AID of a slot.  
Type: AID  
Range:
  - SlotAID
  - UnivSlotAID
  - XCSlotAID
  - CTLSlotAID.The keyword *usall* is allowed for Simple\_UnivSlotAID.  
The keyword *xcall* is allowed for Simple\_XCSlotAID.  
The keyword *ctllall* is allowed for Simple\_CTLSlotAID.  
The keyword *all* is allowed for Simple\_SlotAID.  
The keyword *all* is not allowed on bay/shelf level.
3. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-EQPT command, the following output report is returned:

sid date time

```
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Output parameters** The output actlname is an attribute list per slot and nvmname/nvmqual is an optional pair of attributes per slot.

1. aid – Access Identifier  
Description: The AID of a slot.  
Type: AID  
Range: SlotAID  
The keyword *usall* is not allowed for Simple\_UnivSlotAID.  
The keyword *xcall* is not allowed for Simple\_XCSlotAID.  
The keyword *ct1all* is not allowed for Simple\_CTLSlotAID.  
The keyword *all* is not allowed for Simple\_SlotAID, Simple\_UnivSlotAID, Simple\_XCSlotAID, Simple\_CTLSlotAID.  
The keyword *all* is not allowed on bay/shelf level.

#### Spec block parameters

1. actlname – Acceptable Circuit Pack Name  
This parameter is reported by itself The line is repeated for all groups of acceptable circuit packs in the slot. This list specifies the groups of circuit packs which can be provisioned for that slot. The detailed information about the groups can be requested via RTRV-ACTLCP.  
Type: value set.  
Range: 12 character.
2. app – Apparatus Code  
Apparatus Code as stored in the EEPROM on the circuit pack. This parameter should be reported for a SlotAID, if the value of *holdst* is VALID or UNEXPECTED.  
Type: alphanumeric string.  
Range: up to 9 characters.



RTRV-EQPT (slot): Retrieve Equipment  
(slot)

3. clei – Common Language Equipment  
Common Language Equipment as stored in the EEPROM on the circuit pack.  
This parameter should be reported for a SlotAID, if the value of **holdst** is VALID or UNEXPECTED.  
Type: value set  
Range: 10 characters
4. eci – Equipment Catalog Item  
Equipment Catalog Item as stored in the EEPROM on the circuit pack.  
This parameter should be reported for a SlotAID, if the value of **holdst** is VALID or UNEXPECTED.  
Type: value set.  
Range: 6 digits.  
Default: none.
5. eqptpn – Equipment ASAP Profile Name  
The name of the current ASAP profile of type EQUIP-PROT on slot level  
Type: Alphanumeric string  
Range: up to 24 characters. A hyphen (-) is additionally allowed in the name.  
Default: DEFAULT.  
Note: **eqptpn** is used on system, shelf and circuit pack level for a profile of type EQUIP-UNPROT.
6. name – Circuit Pack Name  
Circuit Pack Name as stored in the EEPROM on the circuit pack.  
This parameter should be reported for a SlotAID, if the value of **holdst** is VALID or UNEXPECTED.  
Type: value set.  
Range: up to 12 characters.
7. nvmmname – Circuit Pack Name  
This parameter specifies the name of the provisioned circuit pack of the slot. If no circuit pack is provisioned the default value is reported.  
Type: value set.  
Range: 12 character.  
Default: UNDEFINED.

RTRV-EQPT (slot): Retrieve Equipment  
(slot)

8. nvmqual – Circuit Pack Qualifier

This parameter specifies the qualifier of the provisioned circuit pack of the slot. If no circuit pack is provisioned the value UNDEF is reported.

Type: value set.

Range: 7 characters.

The allowed values are:

- UNDEF (default)
- EXTD
- all values as defined in SRD\_ConfigurationManagement

Note: The TL1-representation of the functional qualifier follows the following rules:

- alphanumeric characters or the special character '-' only
- special characters like '/' and '.' to be omitted.

9. qual – Circuit Pack Qualifier

Circuit Pack Qualifier as stored in the EEPROM on the circuit pack.

This parameter should be reported for a SlotAID, if the value of **holdst** is VALID or UNEXPECTED.

Type: value set.

Range: up to 7 characters.

Note: The TL1-representation of the functional qualifier follows the following rules:

- alphanumeric characters or the special character '-' only
- special characters like '/' and '.' to be omitted.

RTRV-EQPT (slot): Retrieve Equipment  
(slot)

#### 10. sln – Serial Number

Serial number as stored in the EEPROM on the circuit pack to identify each circuit pack and indicate the date and place of manufacture.

This parameter should be reported for a SlotAID, if the value of **holdst** is VALID or UNEXPECTED.

Type: Alphanumeric string.

Range: 12 characters.

#### 11. ssn – Series Number

Series Number as stored in the EEPROM on the circuit pack.

This parameter should be reported for a SlotAID, if the value of **holdst** is VALID or UNEXPECTED.

Type: value set.

Range: up to 6 characters.

Note: A dash (-) is used instead of a colon (:) for the series number in TL1.

#### Example input/output

```
RTRV-EQPT:UNITE-NE:1-1-#-#-5:123456;
UNITE-NE 00-11-03 08:00:00
M 123456 COMPLD
"1-1-#-#-5:actlname=OP2G5"
"1-1-#-#-5:actlname=OP10"
...
"1-1-#-#-5:nvmname=OP2G5,nvmqual=13SR4,eqtpn=DEFAULT"
"1-1-#-#-5:name=OP2G5,qual=13SR4,app=KFA12"
"1-1-#-#-5:clei=SN49CRTBAB,eci=255694"
"1-1-#-#-5:sln=00NB01002333,ssn=1-1"
;
```

The following example shows the case when it is not possible to provision slot 5, because **actlname** is empty:

```
RTRV-EQPT:UNITE-NE:1-1-#-#-5:123456;
UNITE-NE 00-11-03 08:00:00
M 123456 COMPLD
"1-1-#-#-5:actlname=\"\""
...
"1-1-#-#-5:nvmname=OP40,nvmqual=EXTD,eqtpn=DEFAULT"
"1-1-#-#-5:name=\"\",qual=\"\",app=\"\""
"1-1-#-#-5:clei=\"\",eci=\"\""
"1-1-#-#-5:sln=\"\",ssn=\"\""
```

Slot  
RTRV-EQPT (slot): Retrieve Equipment  
(slot)

;

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command in the Error responses section. The error responses listed there also pertain to the RTRV-EQPT command.

**Related TL1 messages**

- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)
- “ED-EQPT (slot): Edit equipment (slot)” (5-104)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “RTRV-STATE-EQPT (slot): Retrieve equipment state (slot)” (5-120)
- “RTRV-ACTLCP: Retrieve acceptable circuit pack list” (5-35).

**References** GR-199-CORE



## ENT-EQPT (slot): Enter equipment (slot)

---

The ENT-EQPT command pre-provisions a slot for a dedicated circuit pack.

The CTL can not be pre-provisioned. It is always auto-provisioned.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
 Priority: 1  
 Abortable: No.

**Input format** Command Syntax: ENT-EQPT:*tid:aid:ctag:::[spec\_block]*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
3. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. nvmmname – Circuit Pack Name  
See definition of output parameter *nvmmname* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
2. nvmmqual – Circuit Pack Qualifier  
See definition of output parameter *nvmmqual* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).  
Option: If the parameter is omitted, then the special character '-' (i.e. the minus-sign, without the quotes) shall be used as default value.

**Output format** If the ENT-EQPT command completes successfully, then the following normal completion response is returned:

sid date time

ENT-EQPT (slot): Enter equipment (slot)

```
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behavior description

The command preprovisions a slot for a dedicated circuit pack. The following attributes of the slot entity is updated due to that operation:

1. *nvmname* as specified in the command input
2. *nvmqual* as specified in the command input.

The command is only allowed if the slot is not provisioned (*nvmname/nvmqual* = UNDEFINED/UNDEF).

The update is reported by means of an ED-EQPT notification for that slot.

#### Behavior of preprovisioning of multislot circuit packs

The attribute *actlname* of the neighbor slots which are also covered by a multislot circuit pack (e.g. OP40) shall be modified and set to empty (i.e. the output contains one row with *actlname*="", see also Example Input/output section of RTRV-EQPT(slot)).

The attributes *nvmname*, *nvmqual* of the neighbor slots which are also covered by a multislot circuit pack (e.g. OP40) shall be modified and set to *nvmname*, EXTD.

The update is reported by means of an ED-EQPT notification for those slots.

#### Behavior of preprovisioning on multislot circuit packs

The attribute *actname* of the neighbor slot which can not be used anymore by a multislot circuit pack (the physical slot of e.g. an OP40) shall be modified and all multislot CPs shall be removed.

The update is reported by means of an ED-EQPT notification for this slot.

ENT-EQPT (slot): Enter equipment (slot)

### Update affected entities

The command creates in addition a set of entities of different types depending on the value of *nvmname* of command input as follows.

1. One instance of type circuit pack is created. This is reported by means of an ENT-EQPT notification for circuit pack.
2. Some instances of port STM-16 are created if *nvmname* of command equals **OP2G5** and attribute *istddflt* of the node equals **SDH**. This is reported by means of ENT-STM16 notification for port. The number of port instances to be created depends on the capabilities of the actual circuit pack.
3. Some instances of port OC-48 are created if *nvmname* of command equals **OP2G5** and attribute *istddflt* of the node equals **SONET**. This is reported by means of ENT-OC48 notification for port. The number of port instances to be created depends on the capabilities of the actual circuit pack.
4. One instance of port STM-64 is created if *nvmname* of command equals **OP10** and attribute *istddflt* of the node equals **SDH**. This is reported by means of ENT-STM64 notification for port.
5. One instance of port OC-192 is created if *nvmname* of command equals **OP10** and attribute *istddflt* of the node equals **SONET**. This is reported by means of ENT-OC192 notification for port.
6. One instance of port STM-256 is created if *nvmname* of command equals **OP40** and attribute *istddflt* of the node equals **SDH**. This is reported by means of ENT-STM256 notification for port.
7. One instance of port OC-768 is created if *nvmname* of command equals **OP40** and attribute *istddflt* of the node equals **SONET**. This is reported by means of ENT-OC768 notification for port.
8. 48, 192, 768 VC3 tributaries are created for each to the previously created SDH port according to the port rate. This is reported by means of ENT-VC3 notification for tributary.
9. 48, 192, 768 STS1 tributaries are created for each to the previously created SONET port according to the port rate. This is reported by means of ENT-STs1 notification for tributary.

ENT-EQPT (slot): Enter equipment (slot)

10. Two dcc channels entities are created (one per type section/dccr and one type line/dccm) for each previously created SDH/SONET port. This is reported by means of ENT-FECOM notification for dcc channel.
11. One instance of 1+1 equipment protection group of type 'EQPTSWFBR' is created if *nvmname* of command equals **XC320** and another **XC320** circuit pack exists already. This is reported by means of ENT-PROTNGRP notification for 1+1 equipment protection group. The initial protection state is reported by means of a protection switch notification for the 1+1 equipment protection group.

#### Update affected entities – GE1

The command creates in addition a set of entities of different types depending on the value of *nvmname* of command input as follows.

1. One instance of type circuit pack is created. This shall be reported by means of an ENT-EQPT notification for circuit pack.
2. Four instances of entity EPORT are created if *nvmname* of command equals **GE1**. This shall be reported by means of ENT-EPORT notification.
3. Four instances of entity VCG are created if *nvmname* of command equals **GE1**. This shall be reported by means of ENT-VCG notification.
4. 7 VC-4 tributaries are created for each to the previously created VCG if attribute *istddflt* of the node equals 'SDH'. This is reported by means of ENT-VCGTRIB notification.
5. 21 STS-1 tributaries shall be created for each to the previously created VCG if attribute *istddflt* of the node equals 'SONET'. This is reported by means of ENT-VCGTRIB notification.



ENT-EQPT (slot): Enter equipment (slot)

### Update affected entities - Port Entities of OP622

In addition to the rules listed in ID 17111 the command shall create the following entities if nvmname equals OP622:

- Some instances of port STM-4 are created if the attribute *istddflt* of the node equals 'SDH'. This shall be by means of ENT-STM4 notification for port. The number of port instances to be created depends on the capabilities of the actual circuit pack.
- Some instances of port OC-12 are created if the attribute *istddflt* of the node equals 'SONET'. This is reported by means of ENT-OC12 notification for port. The number of port instances to be created depends on the capabilities of the actual circuit pack.
- 12 VC3 tributaries are created for each of the previously created SDH ports. This is reported by means of ENT-VC3 notifications for tributary.  
12 STS1 tributaries are created for each of the previously created SONET port. This is reported by means of ENT-STSI notifications for tributary.

### Update affected entities - Port Entities of OP155

In addition to the rules listed in ID 17111 the command shall create the following entities if nvmname equals OP155:

- Some instances of port STM-1 are created if the attribute *istddflt* of the node equals SDH. This is reported by means of ENT-STM1 notification for port. The number of port instances to be created depends on the capabilities of the actual circuit pack.
- Some instances of port OC-3 are created if the attribute *istddflt* of the node equals SONET. This is reported by means of ENT-OC3 notification for port. The number of port instances to be created depends on the capabilities of the actual circuit pack.
- 3 VC3 tributaries are created for each of the previously created SDH ports. This is reported by means of ENT-VC3 notifications for tributary.
- 3 STS1 tributaries are created for each of the previously created SONET port. This is reported by means of ENT-STSI notifications for tributary.

ENT-EQPT (slot): Enter equipment (slot)

### **Update affected entities - Port Entities of EP155**

In addition to the rules listed in ID 17111 the command shall create the following entities if nvmname equals EP155:

- 8 STM-1E port instances of the actual circuit pack shall be created. This shall be reported by means of ENT-STM1E notification for port.
- 1 VC4 tributary shall be created for each of the previously created SDH ports. This shall be reported by means of ENT-VC3 notifications for tributary.

### **Update affected entities - OPLB**

The command shall create following entities:

- One instance of type circuit pack shall be created. This shall be reported by means of an ENT-EQPT notification for circuit pack.
- Some instances of type socket shall be created for each socket contained on the circuit pack one. This shall be reported by means of ENT-EQPT notifications for sockets.

### **Update affected entities - OP2G5D**

The command shall create following entities:

- One instance of type circuit pack shall be created. This shall be reported by means of an ENT-EQPT notification for circuit pack.
- Some instances of type socket shall be created for each socket contained on the circuit pack one. This shall be reported by means of ENT-EQPT notifications for sockets.

### **Update affected entities - OP10D**

The command shall create following entities:

- One instance of type circuit pack shall be created. This shall be reported by means of an ENT-EQPT notification for circuit pack.
- Some instances of type socket shall be created for each socket contained on the circuit pack one. This shall be reported by means of ENT-EQPT notifications for sockets.

### **Update affected entities - OP2G5 qualifier = PARENT**

If the nvmqual is equal PARENT for an circuit pack to be provisioned additional to rules described for an OP2G5 circuit pack following rules shall apply.

ENT-EQPT (slot): Enter equipment (slot)

The command shall create following entities:

- Some instances of type socket shall be created for each socket contained on the circuit pack one. This shall be reported by means of ENT-EQPT notifications for sockets.

### Group notification for STS-1/AU-3 tributaries

For efficiency reasons the notifications for tributaries are sent out as a single notification (so-called group notification) using a range over the aid which depends on the port rate of the associated port, i.e. the Simple\_STS1NumAID field in the STS1NumAID is set to:

1&&-<N> with N is maximal legal STS-1/AU-3 number.

**Reference - AID range for group notification:** See STS-1/AU-3 Tributaries AID w.r.t. range for legal STS-1/AU-3 number.

See STS-1/AU-3 Tributaries AID w.r.t. range for legal STS-1/AU-3 number.

Example: The AID field in a group notification for a tributaries related to port 1 for a OP10 pack in slot 1 looks like:

1-1-#-#-1-1-1&&-192.

### Group notification for VCG tributaries

For efficiency reasons the notifications for VCG tributaries are sent out as a single notification (so-called group notification) using a range over the aid which depends on the used mapping of the associated VCG port, i.e. the Simple\_VCGNumAID field in the VCGNumAID is set to:

- 1&&-<N> for sequential range
- 1&-4 .. &-<N> for non-sequential range.

with N is maximal legal VCG tributary number.

**Reference - AID range for group notification:** See VCG Tributaries AID w.r.t. range for legal VCG number and sequential/non-sequential aid range.

Example: The AID field in a group notification for a VCG tributaries related to VCG port 1 for a GE1 pack in slot 1 looks like:

1-1-#-#-1-v1-1&&-21 (for STS-1/VC-3 mapping) 1-1-#-#-1-v1-1&-4&-7&-10&-13&-16&-19 (for STS-3c/VC-4 mapping).

### Example input/output

```
ENT-EQPT:UNITE-NE:1-1-#-#-1:123456:::nvmname=OP10,
nvmqual=1.5LR1;
```

ENT-EQPT (slot): Enter equipment (slot)

```

    UNITE-NE 98-01-01 08:00:00
M 123456 COMPLD
;

```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ENT-EQPT command.

**Validation rule: Slot must not be provisioned**

It should be check wether the slot is still auto or preprovisioned. Only a unprovisioned slot can be preprovisioned for a dedicated circuit pack. To preprovision a slot the *nvmname/nvmqual* shall be UNDEFINED/UNDEF (=unprovisioned).

Error code: IDNV - Input, Data Not Valid, Slot still provisioned

**Validation rule: Check whether CP is acceptable**

Check of the circuit pack type which is allowed for the slot.

Consistency shall be checked at two levels:

- between *actlname/actlqual* with *nvmname/nvmqual* at system level
- between actlname with nvmname at slot level.

Error code: EATN - Status, incorrect equipage, unrecognized CP for this slot.

**Validation rule: Check whether system is maintenance condition**

Preprovisioning is not allowed, when the system in maintenance condition (see “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)).

Error code: SNVS - Status, Not in Valid State, maintenance condition

**Validation rule: Reject Request for CTL slots**

If *ctlw* or *ctlp* is specified as Simple\_CTLSlotAID the command is rejected.

Error code: IENE - Input, Entity Not Exists

ENT-EQPT (slot): Enter equipment (slot)

**Related TL1 messages**

- “ED-EQPT (slot): Edit equipment (slot)” (5-104)
- “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “RTRV-ACTLCP: Retrieve acceptable circuit pack list” (5-35).

**References** GR-199-CORE



## ED-EQPT (slot): Edit equipment (slot)

---

The ED-EQPT command modifies the provisioning values associated with slot.

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                   Priority: 1  
                   Abortable: No.

**Input format**    Command Syntax: ED-EQPT:*tid:aid:ctag::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *eqptpn* – Equipment ASAP Profile Name  
       See definition of output parameter *eqptpn* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
2.    *nvmname* – Circuit Pack Name  
       See definition of output parameter *nvmname* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
3.    *nvmqual* – Circuit Pack Qualifier  
       See definition of output parameter *nvmqual* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).  
       Option: If this parameter is omitted but parameter *nvmname* is specified in the command request, then the special character '-' (i.e. the minus-sign, without the quotes) shall be used as default value.

ED-EQPT (slot): Edit equipment (slot)

**Output format** If the ED-EQPT command completes successfully, then the following normal completion response is returned:

```

    sid date time
M  ctag COMPLD
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The command shall modify the provisioned circuit pack for a specified slot. The spec block parameters of the slot entity as specified in the command input shall be updated due to that operation.

The modification is reported by means of ED-EQPT notification for the slot.

**Example input/output**

```

ED-EQPT:UNITE-NE:1-1-#-#-1:123456:::nvmname=OP10,
nvmqual=1.5LR1;
    UNITE-NE 98-01-01 08:00:00
M  123456 COMPLD
;

```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-EQPT command.

**Validation rule: Check whether CP is acceptable**

Check of the circuit pack type which is allowed for the slot.

Consistency shall be checked at two levels:

- between *actlname/actlqual* with *nvmname/nvmqual* at system level
- between *actlname* with *nvmname* at slot level.

Error code: EATN - Status, incorrect equipage, unrecognized CP for this slot.

**Validation rule: Check whether system is maintenance condition**

Preprovisioning is not allowed, when the system in maintenance condition (see “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)).

## ED-EQPT (slot): Edit equipment (slot)

**Error code:** SNVS - Status, Not in Valid State, maintenance condition

**Validation rule: Check for ASAP profile existence**

When no ASAP profile with the name specified by *eqptpn* exists the following error is returned.

**Error code:** IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: Check exchangeability rules for optical packs**

When the currently provisioned circuit pack is replaced by a new one by specifying the parameters *nvmname* and *nvmqual* the following exchangeability rules shall be checked whether all are fulfilled:

- the currently provisioned CP as well as the new one is an optical pack
- the holder state of the addressed slot is empty OR a pack with the specified *nvmname* and *nvmqual* is already plugged in
- the number of ports of both CPs is identical
- the transmission capacity of both CPs is identical.
- the current port configuration concerning forward error correction is supported by the new CP.

**Error code:** EATN - Status, incorrect equipage, unrecognized CP for this slot.

**Validation rule: Check Exchangeability rules for XC Packs**

When the currently provisioned circuit pack is replaced by a new one by specifying the parameters *nvmname* and *nvmqual* the following exchangeability rules shall be checked whether all are fulfilled:

- the currently provisioned CP as well as the new one is a cross-connect pack AND
- the holder state of the addressed slot is empty OR a pack with the specified *nvmname* and *nvmqual* is already plugged in.

**Error code:** EATN - Status, incorrect equipage, unrecognized CP for this slot.

**Related TL1 messages**

- “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)



ED-EQPT (slot): Edit equipment (slot)

- “RTRV-STATE-EQPT (slot): Retrieve equipment state (slot)” (5-120)
- “RTRV-ACTLCP: Retrieve acceptable circuit pack list” (5-35).

**References** GR-199-CORE



## ED-EQPT notification

---

**Output format** The ED-EQPT notification uses the general format of a REPT DBCHG Report Database Change notification.

Syntax: ED-EQPT:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).

#### Spec block parameters

1. *actlname* – Acceptable Circuit Pack Name  
See definition of output parameter *actlname* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
2. *nvmname* – Circuit Pack Name  
See definition of output parameter *nvmname* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
3. *nvmqual* – Circuit Pack Qualifier  
See definition of output parameter *nvmqual* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
4. *eqtpn* – Equipment ASAP Profile Name  
See definition of output parameter *eqtpn* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
5. *name* – Circuit Pack Name  
Circuit Pack Name as stored in the EEPROM of the replaceable unit.  
Type: value set.  
Range: up to 12 characters.  
Default: empty string ""  
The default is reported on CP plug-out or when the EEPROM is not readable.  
Note: In TL1 output direction the quotes have to escaped \"

6. qual – Circuit Pack Qualifier  
Circuit Pack Qualifier as stored in the EEPROM of the replaceable unit.  
Type: value set.  
Range: up to 7 characters.  
Default: empty string ""  
The default is reported on CP plug-out or when the EEPROM is not readable.  
Note: In TL1 output direction the quotes have to escaped \"
7. app – Apparatus Code  
Apparatus Code as stored in the EEPROM of the replaceable unit.  
Type: alphanumeric string.  
Range: up to 9 characters.  
Default: empty string ""  
The default is reported on CP plug-out or when the EEPROM is not readable.  
Note: In TL1 output direction the quotes have to escaped \"
8. ssn – Series Number  
Series Number as stored in the EEPROM of the replaceable unit.  
Type: value set.  
Range: up to 6 characters.  
Default: empty string ""  
The default is reported on CP plug-out or when the EEPROM is not readable.  
Note: In TL1 output direction the quotes have to escaped \"  
Note: A dash (-) is used instead of a colon (:) for the series number in TL1.
9. clei – Common Language Equipment  
Common Language Equipment as stored in the EEPROM of the replaceable unit.  
Type: value set.  
Range: 10 characters.  
Default: empty string ""  
The default is reported on CP plug-out or when the EEPROM is not readable.  
Note: In TL1 output direction the quotes have to escaped \"

10. eci – Equipment Catalog Item  
Equipment Catalog Item as stored in the EEPROM of the replaceable unit.  
Type: value set.  
Range: 6 digits.  
Default: empty string ""  
The default is reported on CP plug-out or when the EEPROM is not readable.  
Note: In TL1 output direction the quotes have to escaped \"
11. sln – Serial Number  
Serial number as stored in the EEPROM on the circuit pack to identify the replaceable unit and indicate the date and place of manufacture.  
Type: Alphanumeric string.  
Range: 12 characters.  
Default: empty string ""  
The default is reported on CP plug-out or when the EEPROM is not readable.  
Note: In TL1 output direction the quotes have to escaped \"

### Example output

The following examples shows the case after pre-provisioning of slot 1 for an OP2G5/13SR4 pack:

```
ED-EQPT:UNITE-NE:1-1-#-#-1:123456:::nvmmname=OP2G5,
nvmmqual=13SR4;
    UNITE-NE 00-11-14 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-1:::
    nvmmname=OP2G5,nvmmqual=13SR4"
;
```

The following examples shows a case after auto-provisioning of slot 1 with an OP2G5/13SR4 pack (note: it is possible that change of ***nvmmname***, ***nvmmqual*** and change of inventory data is reported in two notifications):

```
    UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-1:::
```

```
nvmname=OP2G5,nvmqual=13SR4"
UNITE-NE 00-11-14 08:00:31
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-1::
name=OP2G5,qual=13SR4,app=KFA12,ssn=1-1,
clei=WMTBJDGA,eci=276912,sln=123456789012"
;
```

The following examples shows a case after plug-out of the OP2G5/13SR4 pack from slot 1:

```
UNITE-NE 00-11-14 08:00:31
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-1::
name="",qual="",app="",ssn="",clei="",
eci="",sln=""
;
```

The following examples shows the case after auto-provisioning of an OP40 into slot 4 and the effect on slot 1:

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-1::
nvmname=OP40,nvmqual=EXTD"
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-1::
actlname=""
;
```



## DLT-EQPT (slot): Delete equipment (slot)

---

The DLT-EQPT command deletes equipment that has been previously created with the ENT-EQPT command or via CP plug-in (auto-provisioning).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: DLT-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).  
The CTL cannot be de-provisioned.
3. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** If the DLT-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The command deletes a circuit pack for a specified slot.

## DLT-EQPT (slot): Delete equipment (slot)

The deletion is reported by means of an DLT-EQPT notification for circuit pack.

For de-provisioning of a slot some conditions must be fulfilled.

**Behavior of deprovisioning for multislot circuit packs**

The attribute *actlname* of the neighbor slots which were covered by the multislot circuit pack (e.g. OP40) shall be modified and set from empty to the list of accepted packs.

The attributes *nvmname*, *nvmqual* of the neighbor slots which were covered by the multislot circuit pack (e.g. OP40) are modified and set to UNDEFINED, UNDEF.

The update is reported by means of an ED-EQPT notification for this slot.

**Behavior of deprovisioning on multislot circuit packs**

The attribute *actname* of the neighbor slot which can now be used again by a multislot circuit pack (the physical slot of e.g. an OP) is modified and all multislot CPs shall be added.

The update is reported by means of an ED-EQPT notification for this slot.

**Update affected entities**

The command deletes in addition a set of entities of different types depending on the provisioned circuit pack

1. One instance of type circuit pack is deleted with attribute *aid*. This is reported by means of DLT-EQPT notification for the CP.
2. The instances of port STM-16 is deleted if *nvmname* of the addressed circuit pack equals **OP2G5** and the port attribute *istd* equals **SDH**. This is reported by means of DLT-STM16 notification of port. The number of port instances to be deleted depends on the capabilities of the actual circuit pack.
3. The instances of port OC-48 are deleted if *nvmname* of the addressed circuit pack equals **OP2G5** and the port attribute *istd* equals **SONET**. This is reported by means of DLT-OC48 notification of port. The number of port instances to be deleted depends on the capabilities of the actual circuit pack.
4. One instance of port STM-64 is deleted if *nvmname* of the addressed circuit pack equals **OP10** and the port attribute *istd* equals 'SDH'. This is reported by means of DLT-STM64 notification of port.

DLT-EQPT (slot): Delete equipment (slot)

5. One instances of port OC-192 is deleted if *nvmname* of the addressed circuit pack equals **OP10** and the port attribute *istd* equals **SONET**. This is reported by means of DLT-OC192 notification of port.
6. One instance of port STM-256 is deleted if *nvmname* of the addressed circuit pack equals **OP40** and the port attribute *istd* equals **SDH**. This is reported by means of DLT-STM256 notification of port.
7. One instances of port OC-768 is deleted if *nvmname* of the addressed circuit pack equals **OP40** and the port attribute *istd* equals **SONET**. This is reported by means of DLT-OC768 notification of port.
8. 48, 192, 768 VC3 tributaries are deleted for each existing SDH port. This is reported by means of DLT-VC3 notifications for tributary.
9. 48, 192, 768 STS1 tributaries are deleted for each existing SONET port. This is reported by means of DLT-STs1 notifications for tributary.
10. The dcc channel entities are deleted for each existing SDH/SONET port. This is reported by means of DLT-FECOM notification for dcc channel.
11. One instance of 1+1 equipment protection group is deleted if *nvmname* of the addressed circuit pack equals **XC320** and another XC320 circuit pack exists. This is reported by means of DLT-PROTNGRP notification for the 1+1 protection group.
12. The parameters *nvmname*, *nvmqual* of the slot will be set to UNDEFINED, UNDEF, which will be reported by an ED-EQPT notification for slot.

#### Update affected entities - GE1

In addition to the rules listed above the command deletes the following entities if *nvmname* equals GE1:

- all instances of the entity EPORT owned by this circuit pack are deleted. This is reported by means of DLT-EPORT notification
- all instances of the entity VCG owned by this circuit pack are deleted. This is reported by means of DLT-VCG notification.
- For each VCG to be deleted all tributaries owned by this VCG are deleted. This is reported by means of DLT-VCGTRIB notification.



DLT-EQPT (slot): Delete equipment (slot)

### Update affected entities - Port Entities of OP622

In addition to the rules listed above the command deletes the following entities if *nvmname* equals OP622:

- 12 VC3 tributaries are deleted for each existing SDH ports. This is reported by means of DLT-VC3 notifications for tributary.
- 12 STS1 tributaries are deleted for each existing SONET port. This is reported by means of DLT-STS1 notifications for tributary.
- The instances of port STM-4 are deleted if the port attribute *istd* of the node equals 'SDH'. This is reported by means of DLT-STM4 notification for port. The number of port instances to be deleted depends on the capabilities of the actual circuit pack.
- The instances of port OC-12 are deleted if the port attribute *istd* of the node equals 'SONET'. This is reported by means of DLT-OC12 notification for port. The number of port instances to be deleted depends on the capabilities of the actual circuit pack.

### Update affected entities - Port Entities of OP155

In addition to the rules listed above the command deletes the following entities if *nvmname* equals OP155:

- 3 VC3 tributaries are deleted for each existing SDH ports. This is reported by means of DLT-VC3 notifications for tributary.
- 3 STS1 tributaries are deleted for each existing SONET port. This is reported by means of DLT-STS1 notifications for tributary.
- The instances of port STM-1 are deleted if the port attribute *istd* of the node equals SDH. This will be reported by means of DLT-STM1 notification for port. The number of port instances to be deleted depends on the capabilities of the actual circuit pack.
- The instances of port OC-3 are deleted if the port attribute *istd* of the node equals SONET. This will be reported by means of DLT-OC3 notification for port. The number of port instances to be deleted depends on the capabilities of the actual circuit pack.

### Update affected entities - GE1-VRTSW Entity

If *nvmname* is GE1 the command has the following additional side effects:

- If *vlantgmd* is 802.1tag the command shall delete the instance of entity *vrtsw*. This is notified by a DLT-VRTSW notification.

DLT-EQPT (slot): Delete equipment (slot)

### **Update affected entities - OPLB**

The command shall delete in addition following entities:

- Some instances of type socket shall be deleted for each socket contained on the circuit pack one. This shall be reported by means of DLT-EQPT notifications for sockets.
- One instance of type circuit pack shall be deleted. This shall be reported by means of an DLT-EQPT notification for circuit pack.

If optical modules are provisioned when the OPLB circuit pack will be de provisioned implicit also the optical modules will be de provisioned at first. The actions described in the DLT-EQPT (socket) command for de provisioning of modules will be performed in this case.

### **Update affected entities - OP2G5D**

The command shall delete in addition following entities:

- Some instances of type socket shall be deleted for each socket contained on the circuit pack one. This shall be reported by means of DLT-EQPT notifications for sockets.
- One instance of type circuit pack shall be deleted. This shall be reported by means of an DLT-EQPT notification for circuit pack.

If optical modules are provisioned when the OP2G5D circuit pack will be de provisioned implicit also the optical modules will be de provisioned at first. The actions described in the DLT-EQPT (socket) command for de provisioning of modules will be performed in this case.

### **Update affected entities - OP10D**

The command shall delete in addition following entities:

- Some instances of type socket shall be deleted for each socket contained on the circuit pack one. This shall be reported by means of DLT-EQPT notifications for sockets.
- One instance of type circuit pack shall be deleted. This shall be reported by means of an DLT-EQPT notification for circuit pack.

If optical modules are provisioned when the OP10D circuit pack will be de provisioned implicit also the optical modules will be de provisioned at first. The actions described in the DLT-EQPT (socket) command for de provisioning of modules will be performed in this case.

DLT-EQPT (slot): Delete equipment (slot)

### Update affected entities - OP2G5 Qualifier = PARENT

Additional to the rules described for circuit packs with nvmmname = OP2G5 following rules apply if the nvmmqual is equal PARENT.

The command shall delete in addition following entities:

- Some instances of type socket shall be deleted for each socket contained on the circuit pack one. This shall be reported by means of DLT-EQPT notifications for sockets.

### Group notification for STS-1/AU-3 tributaries

Refer to Detailed behavior of the “ENT-EQPT (slot): Enter equipment (slot)” (5-95) command for details on grouped notifications for STS1/AU3 tributaries.

### Group notification for VCG tributaries

Refer to Detailed behavior of the “ENT-EQPT (slot): Enter equipment (slot)” (5-95) command for details on grouped notifications for VCG tributaries.

### Disabling of PM monitor

See Detailed behavior of the “ED-STM16: Edit STM16 port” (5-334) w.r.t PM impact as side of effect of port/tributary deletion.

### Example input/output

```
DLT-EQPT:LT-UNITE:1-1-#-#-1:123456;
      LT-UNITE 00-11-14 08:00:00
M 123456 COMPLD
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the DLT-EQPT command.

### Validation rule: No XC loopbacks allowed

Check of XC loopbacks involving the circuit pack to be removed.

Error code: SNVS - Status, Not in Valid State, XC loopbacks still exist

### Validation rule: No protection groups allowed

Check of protection groups involving the circuit pack to be removed.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

DLT-EQPT (slot): Delete equipment (slot)

**Validation Rule: No transparent DCC connections**

Check of used transparent DCC connections involving the circuit pack to be removed.

Error code: SNVS - Status, Not in Valid State, transparent DCC connections are still existing

**Validation rule: Not used as timing reference**

Check of that none of the ports of the involving circuit pack is used as timing reference

Error code: SNVS - Status, Not in Valid State, at least one port used as timing reference

**Validation rule: Not used for OW**

Check of that no connection to a OW port exists.

Error code: SNVS - Status, Not in Valid State, connection to OW port exists

**Validation rule: CP must be plugged out**

Check of that the involved circuit pack is plugged out.

Error code: SNVS - Status, Not in Valid State, the CP is not plugged out

**Validation rule: Check whether system is maintenance condition**

Preprovisioning is not allowed, when the system in maintenance condition (see “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45)).

Error code: SNVS - Status, Not in Valid State, maintenance condition

**Validation rule: Reject Request for CTL slots**

If *ctlw* or *ctlp* is specified as Simple\_CTLSlotAID the command is rejected.

Error code: IENE - Input, Entity Not Exists

**Related TL1 messages**

- “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89)
- “ED-EQPT (slot): Edit equipment (slot)” (5-104)
- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)

DLT-EQPT (slot): Delete equipment (slot)

- “RTRV-STATE-EQPT (slot): Retrieve equipment state (slot)” (5-120)
- “ED-STATE-EQPT (system): Edit equipment state” (5-42)

**References** GR-199-CORE



## RTRV-STATE-EQPT (slot): Retrieve equipment state (slot)

---

The RTRV-STATE-EQPT command retrieves the state information for slots in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
 Priority: 1  
 Abortable: Yes.

**Input format** Command Syntax: RTRV-STATE-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 See definition of input parameter *aid* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** If the RTRV-STATE-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid:spec_block"
  ...
  ...
  "aid:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

RTRV-STATE-EQPT (slot): Retrieve  
equipment state (slot)

### Output parameters

#### aid – Access Identifier

See definition of output parameter *aid* in “RTRV-EQPT (slot):  
Retrieve Equipment (slot)” (5-89).

#### Spec block parameters

##### 1. holdst – Holder Status

Each provisionable slot has an attribute indicating its equipage  
state.

Type: alphanumeric value set

Range:

- EMPTY. The system uses the value “EMPTY” if no circuit  
pack is equipped in that slot.
- VALID. The system shall use the value “Valid” if a circuit  
pack is equipped in that slot as provisioned.
- UNEXPECTED. The system shall use the value  
“Unexpected” if a different circuit pack is equipped in that  
slot as provisioned or if the circuit pack is not acceptable for  
this slot.
- UNKNOWN. The system shall use the value “Unknown” if  
a circuit pack is equipped in that slot with non-readable  
functional type or illegal values for the functional type.

Default: EMPTY.

#### Detailed behavior description

The system retrieves the output parameters as described above.

#### Example input/output

```
RTRV-STATE-EQPT:UNITE-NE:1-1-#-#-2:123456;
UNITE-NE 00-11-03 08:00:00
M 123456 COMPLD
"1-1-#-#-2:holdst=VALID"
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error  
responses section. The error responses listed there also apply to the  
ED-STATE-EQPT command.

Slot

*TL1 messages - configuration management*

RTRV-STATE-EQPT (slot): Retrieve  
equipment state (slot)

**Related TL1 messages**

- “ED-STATE-EQPT (system): Edit equipment state” (5-42)
- “ED-EQPT (slot): Edit equipment (slot)” (5-104)
- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)

**References** GR-833-CORE





## ED-STATE-EQPT (slot) notification

---

**Output format** The ED-STATE-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STATE-EQPT:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89).

#### Spec block parameters

1. *holdst* – Holder Status  
See definition of output parameter *holdst* in “RTRV-STATE-EQPT (slot): Retrieve equipment state (slot)” (5-120).

### Example output

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-STATE-EQPT:
1-1-#-#-1::holdst=VALID"
;
```



## INIT-EQPT (slot): Initialize equipment (slot)

---

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1  
Abortable: No.

**Input format**    Command Syntax: INIT-EQPT:*tid:aid:ctag*[::*spec\_block*];

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
The AID of a slot.  
Type: AID.  
Range:
  - SlotAID
  - UnivSlotAID
  - XCSlotAID
  - CTLSlotAID.The keyword *usall* is not allowed for Simple\_UnivSlotAID  
The keyword *xcall* is not allowed for Simple\_XCSlotAID  
The keyword *ctllall* is not allowed for Simple\_CTLSlotAID  
The keyword *all* is not allowed for Simple\_SlotAID  
The keyword *all* is not allowed on bay/shelf level.
3.    *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *resettype* – Reset Type  
With this parameter the type of the reset is selected. Full reset can be traffic affecting and controller reset is not traffic affecting.  
Type: alphanumeric value set.

INIT-EQPT (slot): Initialize equipment  
(slot)

Range:

- FULL: Full reset
- CONTR: Controller reset.

Default: FULL.

**Output format** If the NE fully complies with the INIT-EQPT request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behavior description

- **resettype=FULL**: The command resets the controller and all transmission devices of the circuit pack in the addressed slot.
- **resettype=CONTR**: The command resets only the controller of the circuit pack in the addressed slot and not the transmission devices.

The INIT-EQPT command does not generate a REPT DBCHG message. There are no unique state change notifications associated with the INIT-EQPT command. There are, however, all the state change notifications (operational state) associated with the subsequent restart of the circuit pack.

#### Update affected entities

These resets affect the operational state of the circuit pack. This change is reported by means of an ED-STATE-EQPT notification for the affected circuit pack. An exception is the reset for CTL pack. For this board no notification is created.

**Example input/output** The following shows an example of the INIT-EQPT command where the AID identifies the universal slot 7 in bay 1, shelf 1:

```
INIT-EQPT:LT-UNITE:1-1-#-#-7:123456:::resettype=CONTR;
LT-UNITE 00-11-16 08:00:00
M 123456 COMPLD
```

Slot  
INIT-EQPT (slot): Initialize equipment  
(slot)

;

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the INIT-EQPT command.

**Related TL1 messages** “INIT-SYS: Initialize System” (5-73)

**References** GR-833-CORE



## Autonomous notifications

---

### Circuit pack plug in

#### Autoprovisioning

If a circuit pack is plugged into an allowed slot, which is not provisioned to any circuit pack, this slot is auto-provisioned to this plugged-in pack. This change is reported by means of an ED-EQPT notification for this slot for the *nvmname*, *nvmqual* parameters and an ED-STATE-EQPT notification for the *holdst* parameter.

#### Unexpected, not acceptable, not recognizable CP handling

If an unexpected or not acceptable circuit pack or a circuit pack which inventory data can not be read is plugged into the slot only the holder status is changed and this is notified by an ED-STATE-EQPT notification.

For all these cases alarms will be sent out in addition.

#### Report of inventory data

In addition to the notifications above the system reports an ED-EQPT (slot) notification for the parameters *name*, *qual*, *app*, *ssn*, *clei*, *eci*, *sln*.

In case the inventory data can not be read the fields shall be reported as empty ("").

If circuit packs will be plugged in containing plugged in modules or fixed mounted modules implicit the socket entities will be updated and created according description of auto provisioning of modules.

#### Create CTL protection group- when plugging a second CTL

When plugging in a second CTL the system shall create one instance of 1+1 equipment protection group of type EQPTCTL

This shall be reported by means of ENT-PROTNGRP notification for 1+1 equipment protection group. The initial protection state shall be reported by means of a protection switch notification for the 1+1 equipment protection group.

#### Further autonomous notifications

For details on further autonomous notifications when auto-provisioning a slot refer to the detailed behavior of "ENT-EQPT (slot): Enter equipment (slot)" (5-95) describing the side effects during pre-provisioning.

**Circuit pack plug out** If a circuit pack is plugged out the holder state for this board will change. This change is reported by means of an ED-STATE-EQPT notification for the *holdst* parameter.

In addition to the notification above the system reports an ED-EQPT (slot) notification for the parameters *name*, *qual*, *app*, *ssn*, *clei*, *eci*, *sln*.

If circuit packs will be plugged out containing plugged in modules or fixed mounted modules implicit the socket entities will be updated according description of plug out of modules.

**Change of functional type for neighbor slots** If a multislot circuit pack with *nvmname*=<XXX> is provisioned to slot n the parameters *nvmname*, *nvmqual* of each slots m to n-1 (n>m) change to <XXX>, EXTENDED and the parameter *actlname* is set to empty (i.e. the output contains one row with *actlname*="", see also Example Input/output section of ED-EQPT(slot) notification). This change is reported by means of ED-EQPT notification for slot m to n-1 for *nvmname*, *nvmqual*, *actlname* parameters.

If a circuit pack is provisioned and as side effect it is no longer possible to use one of the neighbor slot for a multislot CP, the parameter *actlname* for this slot is changed and all multislot CPs are removed. This change is reported by means of an ED-EQPT notification.

If a multislot circuit pack of slot n is deprovisioned the parameters *nvmname*, *nvmqual* of each slots m to n-1 (n>m) change to UNDEFINED, UNDEF and the parameters *actlname* changes to list of acceptable CPs. This change is reported by means of ED-EQPT notifications for slot m to n-1 for *nvmname*, *nvmqual*, *actlname* parameters.

If a circuit pack is deprovisioned and as side effect it becomes now possible to use one of the neighbor slot for a multislot CP, the parameter *actlname* for this slot is changed and all multislot CPs are added. This change is reported by means of an ED-EQPT notification.

**System start-up with default DB** The system shall autonomously create all entities addressable by SlotAID when starting up with the default database. No notification is sent.

□

# Socket

## Overview

---

**Purpose** Circuit packs can contain sockets where modules can be plugged in. For unite in the current version Pluggable Interfaces mainly optical modules will be plugged in. A module with a pluggable interface will be only related to one port (e.g. a STM64 port). The relation is done in that way that a socket number n is related to a port number n of the same slot (e.g. port 1-1-#-#-1-sc3 is related to socket 1-1-#-#-1-3) The port functionality (and the related e.g. tributaries) is not available as long no module is provisioned by a provisioning command or by plugging in. This means the related entities will be only available if a module is provisioned. A socket behaves similar like a slot. That means there can be inventory data of the module read out, it can be (pre- or auto-) provisioned and also the acceptable type list for the socket is available. Also the rules how and when a module can be provisioned or de provisioned are similar.

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## RTRV-EQPT (Socket): Retrieve equipment

---

The RTRV-EQPT command shall retrieve the provisioning information associated with socket.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes.

**Input format** Command Syntax: RTRV-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
 The AID of a socket.  
 Type: AID.  
 Range: SocketAID. The keyword *usall* or *all* shall be allowed for Simple\_UnivSlotAID. The keyword *scall* shall be allowed for Simple\_SocketAID. The keyword *all* is not allowed on bay/shelf level.
3. ctag – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-EQPT command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_ block]"
  ... ..
  "aid[:spec_ block]"
;
```



RTRV-EQPT (Socket): Retrieve equipment

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

The output *actlname/actlqual* is a list of attribute pairs per socket and *nvmname/nvmqual* is an optional pair of attributes per socket.

1. aid – Access Identifier  
The AID of a socket.  
Type: AID.  
Range: SocketAID. The keywords *all* / *usall* / *scall* shall are not allowed on any level.

### Spec block parameters

1. actlname – Acceptable Module Name  
This parameter shall be reported by itself together with actlmodqual. The line shall be repeated for all acceptable modules in the socket. This list specifies the modules which can be provisioned for that socket.  
Type: value set.  
Range: 12 characters.
2. actlqual – Acceptable Module Qualifier  
This parameter shall be reported by itself together with actlmodname. The line shall be repeated for all acceptable modules in the socket. This list specifies the modules which can be provisioned for that socket.  
Type: value set.  
Range: 7 characters.  
Note: The TL1-representation of the functional qualifier shall follow the rules as defined in SRD\_ConfigurationManagement:
  - alphanumeric characters or the special character '-' only
  - special characters like '/' and '.' to be omitted
3. app - Apparatus Code  
Apparatus Code as stored in the EEPROM. This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the Small EEPROM Format.  
Type: alphanumeric string.  
Range: up to 9 characters.

RTRV-EQPT (Socket): Retrieve equipment

4. ccode - Commercial Code  
Commercial code + suffix as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: numeric string.  
Range: up to 12 digits.
5. clei – Common Language Equipment  
Common Language Equipment as stored in the EEPROM on the module.  
This parameter should be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED.  
Type: value set.  
Range: 10 characters.
6. datecde - Date Code  
Vendor Date Code as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Text string.  
Range: 8 characters.
7. eci – Equipment Catalog Item  
Equipment Catalog Item as stored in the EEPROM on the module.  
This parameter should be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED.  
Type: value set.  
Range: 6 digits.
8. eqtpn – Equipment ASAP Profile Name  
The name of the current ASAP profile of type EQUIP-PROT on socket level.  
Type: Alphanumeric string.  
Range: up to 24 characters. A hyphen ( - ) is additionally allowed in the name.  
Default: DEFAULT.

## RTRV-EQPT (Socket): Retrieve equipment

9. name – Module Name  
Circuit Pack Name as stored in the EEPROM on the module.  
This parameter should be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED.  
Type: value set.  
Range: up to 12 characters.
10. nvmmname – Provisioned Module Name  
This parameter shall specify the name of the provisioned module of the socket. If no module is provisioned the default value is reported.  
Type: value set.  
Range: 12 character.  
Default: UNDEFINED.
11. nvmmqual – Provisioned Module Qualifier  
This parameter shall specify the qualifier of the provisioned module of the slot. If no module is provisioned the default value is reported..  
Type: value set.  
Range: 7 characters.  
Default: UNDEF.  
Note: The TL1-representation of the functional qualifier shall follow the rules as defined in SRD\_ConfigurationManagement:
  - alphanumeric characters or the special character '-' only
  - special characters like '/' and '.' to be omitted.
12. prodid - Product Line Id  
Binary Compatibility + UNITE Serial Number Identifier as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Hexadecimal number.  
Range: 5 bytes where each byte shall be represented as 2 hexadecimal digits.
13. qual – Module Qualifier  
Circuit Pack Qualifier as stored in the EEPROM on the module.  
This parameter should be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED.  
Type: value set.  
Range: up to 7 characters.

RTRV-EQPT (Socket): Retrieve equipment

Note: The TL1-representation of the functional qualifier shall follow the rules as defined in SRD\_ConfigurationManagement:

- Alphanumeric characters or the special character '-' only
- Special characters like '/' and '.' to be omitted.

14. sln – Serial Number

Serial number as stored in the EEPROM on the module to identify each module and indicate the date and place of manufacture.

This parameter should be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED.

Type: Alphanumeric string

Range: 12 characters.

15. ssn – Series Number

Series Number as stored in the EEPROM on the module.

This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the Small EEPROM Format.

Type: value set.

Range: up to 6 characters.

Note: A dash (-) is used instead of a colon (:) for the series number in TL1.

16. vendornam - Vendor Name

Vendor Name as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.

Type: Text string

Range: 16 characters.

17. vendoroui - Vendor Company Identifier

Vendor Company Identifier as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.

Type: Hexadecimal number

Range: 3 bytes where each byte shall be represented as 2 hexadecimal digits.

RTRV-EQPT (Socket): Retrieve equipment

18. vendorpartno - Vendor Part Number  
Vendor Part Number as stored in the EEPROM on the module.  
This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Text string  
Range: 16 characters.
19. vendorrevlvl - Vendor Revision Level  
Vendor Revision Level as stored in the EEPROM on the module.  
This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Text string.  
Range: 4 characters.
20. vendorsln - Vendor Serial Number  
Vendor Serial Number + WES Vendor Identifier as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the value of holdst is VALID or UNEXPECTED and the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Text string.  
Range: 20 characters.

### Detailed behavior description

#### Omit inventory data parameters if not accessible.

If the system cannot access inventory data related to the addressed socket, e.g. due to a missing or defect pack or a system-internal communication outage, the following parameters shall be omitted from the command response:

- *clei*
- *ccode*
- *eci*
- *name*
- *prodid*
- *qual*
- *sln*
- *ssn*

RTRV-EQPT (Socket): Retrieve equipment

- *vendorname*
- *vendoroui*
- *vendorpartno*
- *vendorrevlvl*
- *vendorsln.*

### **Reporting of inventory data for different module types**

Different module types will support a different set of inventory data.

Modules with a LUCENT specific specification will support following parameters:

- *clei*
- *eci*
- *name*
- *qual*
- *sln*
- *ssn.*

For SFP modules following parameters will be supported:

- *ccode*
- *clei*
- *datecde*
- *name*
- *prodid*
- *qual*
- *vendorname*
- *vendoroui*
- *vendorpartno*
- *vendorrevlvl*
- *vendorsln.*

### **Reporting of inventory data based on defined format of EEPROM content**

As long as the Inventory Data on the Optical Modules is accessible and readable, the parameters shall be reported as they are extracted from the EEPROM according to the format definitions. If the data in the EEPROM is not according to the defined format, then for each

RTRV-EQPT (Socket): Retrieve equipment

parameter the defined number of bytes is taken from the defined location in the EEPROM without any check of the extracted data.

### Example input/output

The following example shows a normal response for RTRV-EQPT for one socket when a module is plugged in:

```
RTRV-EQPT:UNITE-NE:1-1-#-#-5-sc2:123456;
    UNITE- NE 00-11-03 08:00:00
M 123456 COMPLD
    "1- 1-#-#-5-sc2:actlname=OM2G5,actlqual=13LR1"
    "1- 1-#-#-5-sc2:actlname=OM2G5,actlqual=15LR1"
    "1- 1-#-#-5-sc2:nvmname=OP2G5,nvmqual=13SR4,
    eqtpn=DEFAULT"
    "1- 1-#-#-5:name=OM2G5,qual=15LR1,comcde=109192278000,
    clei=WM3ILPEDAA,eci=255694,sln=00NB01002333,ssn=1-1"
;
```

The following example shows a response if a module is not plugged into a socket:

```
RTRV-EQPT:UNITE-NE:1-1-#-#-5-sc2:123456;
    UNITE- NE 00-11-03 08:00:00
M 123456 COMPLD
    "1- 1-#-#-5-sc2:actlname=OM2G5,actlqual=13LR1"
    "1- 1-#-#-5-sc2:actlname=OM2G5,actlqual=15LR1"
    "1- 1-#-#-5-sc2:nvmname=OP2G5,nvmqual=13SR4,
    eqtpn=DEFAULT"
;
```

### Error responses

Refer to the "RTRV-HDR: Retrieve header" (5-8) command Error responses section. The error responses listed there also apply to the RTRV-EQPT command.



## ENT-EQPT (Socket): Enter equipment

---

The ENT-EQPT command preprovisions a socket for a dedicated module.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ENT-EQPT:*tid:aid*:ctag::*[spec\_block]*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
3. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. nvmmname – Provisioned Module Name  
See definition of output parameter *nvmmname* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
2. nvmmqual – Provisioned Module Qualifier  
See definition of output parameter *nvmmqual* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).  
Option: If the parameter is omitted, then the special character '-' (i.e. the minus-sign, without the quotes) shall be used as default value.

**Output format** If the ENT-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
```



ENT-EQPT (Socket): Enter equipment

;

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behavior description

The command shall preprovision a socket for a dedicated module.

The following attributes of the socket entity shall be updated due to that operation:

- *nvmname* as specified in the command input
- *nvmqual* as specified in the command input.

The command is only allowed if the socket is unprovisioned (*nvmname*/*nvmqual* = UNDEFINED/UNDEF).

The update shall be reported by means of an ED-EQPT notification for that socket.

Since the creation of the module is not reported no ENT-EQPT notification for a module entity will be reported.

#### Group notification for STS-1/AU-3 tributaries

For efficiency reasons the notifications for tributaries shall be sent out as a single notification (so-called group notification) using a range over the aid which depends on the port rate of the associated port, i.e. the Simple\_STS1NumAID field in the STS1NumAID is set to:

- 1&&-<N>

with N is maximal legal STS-1/AU-3 number.

See STS-1/AU-3 Tributaries AID w.r.t. range for legal STS-1/AU-3 number.

Example:

The AID field in a group notification for a tributaries related to port 1 for a OP10 pack in slot 1 looks like: 1-1-#-#-1-1-1&&-192.

#### Example input/output

This example shows an ENT-EQPT command for pre provisioning of a socket:

```
ENT-EQPT:UNITE-NE:1-1-#-#-5-sc2:123456:::nvmname=0M2G5,
nvmqual=13LR1;
    UNITE-NE 98-01-01 08:00:00
M 123456 COMPLD
```

ENT-EQPT (Socket): Enter equipment

;

**Error responses** Refer to the RTRV-HDR command Error responses section. The error responses listed there also apply to the ENT-EQPT command.

**Validation rule: Socket must not be provisioned**

It should be check wether the socket is still auto or preprovisioned. Only a unprovisioned slot can be preprovisioned for a dedicated module. To preprovision a socket the nvmmname/nvmqual shall be UNDEFINED/UNDEF (=unprovisioned).

Error code: IDNV - Input, Data Not Valid, Socket still provisioned

**Validation rule: Check whether module is acceptable**

Check of the module type which is allowed for the socket. Consistency between actlname/actlqual with nvmmname/nvmqual shall be checked.

Error code: EATN - Status, incorrect equipage, unrecognized Module for this socket.

**Validation rule: Check whether system is maintenance condition**

Preprovisioning shall not be allowed, when the system in maintenance condition. (See “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).)

Error code: SNVS - Status, Not in Valid State, maintenance condition

**Related TL1 messages**

- “DLT-EQPT (Socket): Delete equipment” (5-151)
- “ED-EQPT (Socket): Edit equipment” (5-142)
- “RTRV-EQPT (Socket): Retrieve equipment” (5-130)

**References** GR-199-CORE



## ENT-EQPT notification

---

**Output format** The ENT-EQPT notification uses the general format of a REPT DBCHG Report Database Change notification.

Syntax: ENT-EQPT:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of input parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).

#### Spec block parameters

1. *eqtpn* – Equipment ASAP Profile Name  
See definition of output parameter *eqtpn* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
2. *nvmmname* – Provisioned Module Name  
See definition of output parameter *nvmmname* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
3. *nvmmqual* – Provisioned Module Qualifier  
See definition of output parameter *nvmmqual* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).

**Example output** The following examples shows the case after pre-provisioning of slot 5 socket 2:

```
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-14:ENT-EQPT:1-1-#-#-5-
    sc2::nvmmname=OM2G5,nvmmqual=15LR1,eqtpn=PROFILE1"
;
```



## ED-EQPT (Socket): Edit equipment

---

The ED-EQPT command shall modify the provisioning values associated with socket.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
 Priority: 1  
 Abortable: no.

**Input format** Command Syntax: ED-EQPT:*tid:aid:ctag::spec\_block*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
3. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. eqptpn – Equipment ASAP Profile Name  
See definition of output parameter *eqptpn* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
2. nvmmname – Provisioned Module Name  
See definition of output parameter *nvmmname* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130)
3. nvmmqual - VLAN Tagging Mode  
See definition of output parameter *nvmmqual* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).  
Option: If this parameter is omitted but parameter *nvmmname* is specified in the command request, then the special character '-' (i.e. the minus-sign, without the quotes) shall be used as default value.

## ED-EQPT (Socket): Edit equipment

**Output format** If the ED-EQPT command completes successfully, then the following normal completion response is returned:

```

    sid date time
M  ctag COMPLD
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The command modifies the provisioned module for a specified socket. The spec block operation. The modification shall be reported by means of ED-EQPT notification for the slot.

**Example input/output** This example shows an ED-EQPT command which reprovisions the socket and assigns a new ASAP:

```

ED-EQPT:UNITE-NE:1-1-#-#-5-sc2:123456:::nvmname=0M2G5,
nvmqual=15LR1,eqtpn=PROFILE1;
    UNITE-NE 98-01-01 08:00:00
M  123456 COMPLD
;

```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-EQPT command.

**Validation rule: Check whether module is acceptable**

Check of the module type which is allowed for the socket. Consistency between actlname/actlqual list with nvmname/nvmqual shall be checked.

Error code: EATN - Status, incorrect equipage, unrecognized module for this socket

**Validation rule: Check exchangeability rules for optical modules**

When the currently provisioned optical module is replaced by a new one by specifying the parameters *nvmname* and *nvmqual* the

## ED-EQPT (Socket): Edit equipment

following exchangeability rules shall be checked whether all are fulfilled:

- the currently provisioned module as well as the new one is an optical module
- the currently provisioned module as well as the new one is an optical module - the holder state of the addressed socket is empty OR a module with the specified *nvmname* and *nvmqual* is already plugged in.
- the transmission capacity of both modules is identical.

Errorcode: EATN - Status, incorrect equipage, unrecognized module for this socket

**Validation rule: Check whether system is in maintenance condition**

Preprovisioning shall not be allowed, when the system is in maintenance condition. (See “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).)

Error code: SNVS - Status, Not in Valid State, maintenance condition

**Validation rule: Check for ASAP profile existence**

When no ASAP profile with the name specified by eqtpn exists the following error shall be returned.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Related TL1 messages**

- “DLT-EQPT (Socket): Delete equipment” (5-151)
- “ENT-EQPT (Socket): Enter equipment” (5-138)
- “RTRV-EQPT (Socket): Retrieve equipment” (5-130)
- “RTRV-STATE-EQPT (Socket): Retrieve equipment state” (5-157)

**References** GR-199-CORE

## ED-EQPT notification

---

**Output format** The ED-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-EQPT:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition of input parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).

#### Spec block parameters

1. app - Apparatus Code  
Apparatus Code as stored in the EEPROM. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the Small EEPROM Format.  
Type: alphanumeric string  
Range: up to 9 characters.  
Default: empty string "". The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to escaped \"
2. ccode - Commercial Code  
Commercial code + suffix as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: alphanumeric string  
Range: up to 12 digits  
Default: empty string "". The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to escaped \"

3. clei – Common Language Equipment  
Common Language Equipment as stored in the EEPROM of the module.  
Type: value set.  
Range: 10 characters.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"
4. datecde - Date Code  
Vendor Date Code as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Text string.  
Range: 8 characters.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"
5. eci – Equipment Catalog Item  
Equipment Catalog Item as stored in the EEPROM of the module.  
Type: value set  
Range: 6 digits.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"
6. eqptpn – Equipment ASAP Profile Name  
See definition of output parameter *eqptpn* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
7. name – Module Name  
Module Name as stored in the EEPROM of the module.  
Type: value set.  
Range: up to 12 characters.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"



8. **nvmname** – Provisioned Module Name  
See definition of output parameter ***nvmname*** in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
9. **nvmqual** – Provisioned Module Qualifier  
See definition of output parameter ***nvmqual*** in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
10. **prodid** - Product Line Id  
Binary Compatibility + UNITE Serial Number Identifier as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Hexadecimal Number  
Range: 5 bytes where each byte shall be represented as 2 hexadecimal digits.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \".
11. **qual** – Module Qualifier  
Module Qualifier as stored in the EEPROM of the module.  
Type: value set.  
Range: up to 7 characters.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \".
12. **sln** – Serial Number  
Serial number as stored in the EEPROM on the module to identify the module and indicate the date and place of manufacture.  
Type: alphanumeric string.  
Range: 12 characters.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \".

13. ssn – Series Number  
Series Number as stored in the EEPROM of the module.  
Type: value set.  
Range: up to 6 characters.  
Default: empty string "".  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"".  
Note: A dash (-) is used instead of a colon (:) for the series number in TL1.
14. vendorname - Vendor Name  
Vendor Name as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Text string  
Range: 16 characters  
Default: empty string ""  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"".
15. Vendor Company Identifier  
Vendor Company Identifier as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Hexadecimal number  
Range: 3 bytes where each byte shall be represented as 2 hexadecimal digits.  
Default: empty string ""  
The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"".
16. vendorpartno - Vendor Part Number  
Vendor Part Number as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.  
Type: Text string

Range: 16 characters

Default: empty string ""

The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"

17. vendorrevlvl - Vendor Revision Level

Vendor Revision Level as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.

Type: Text string

Range: 4 characters

Default: empty string ""

The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"

18. vendorsln - Vendor Serial Number

Vendor Serial Number + WES Vendor Identifier as stored in the EEPROM on the module. This parameter shall be reported for a SocketAID, if the data in the EEPROM is stored according to the SFP EEPROM Format.

Type: Text string

Range: 20 characters

Default: empty string ""

The default is reported on module plug-out or when the EEPROM is not readable. Note: In TL1 output direction the quotes have to be escaped \"

**Example output**

This example shows the ED-EQPT notification after reprovisioning of a socket:

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-5-
sc2::nvmname=0M2G5,nvmqual=15LR1,eqptpn=PROFILE1"
;
```

This example shows the ED-EQPT notification reporting the inventory data after plugging in a modul:

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
```

```
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-5-sc2::  
name=0M2G5,qual=15LR1,ccode=109192278000,  
clei=WM3ILPEDAA,eci=255694,sln=00NB01002333,ssn=1-1"  
;
```

This example shows the ED-EQPT notification reporting the not readable inventory data after plug out of a module:

```
UNITE-NE 00-11-14 08:00:30  
A 001 REPT DBCHG  
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-5-sc2::  
name=\"\",qual=\"\",comcde=\"\",clei=\"\",eci=\"\",  
sln=\"\",ssn=\"\"  
;
```



## DLT-EQPT (Socket): Delete equipment

---

**Output format** The DLT-EQPT command shall delete module that has been previously created with the ENT-EQPT command or via module plug-in (autoprovisioning).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: no.

**Input format** Command Syntax: DLT-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
3. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** If the DLT-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section for the “RTRV-HDR: Retrieve header” (5-8) command.

**Detailed behaviour description** The command shall delete a module for a specified socket. Since the creation of the module is not reported no DLT-EQPT notification for module will be reported.

### Update affected entities

The command updates / deletes in addition a set of entities of different types depending on the provisioned optical module:

1. 3, 12, 48, 192 VC3 tributaries shall be deleted for each existing SDH port. This shall be reported by means of DLT-VC3 notifications for tributary.
2. 3, 12, 48, 192 STS1 tributaries shall be deleted for each existing SONET port. This shall be reported by means of DLT-STS1 notifications for tributary.
3. The dcc channel entities shall be deleted for each existing SDH/SONET port. This shall be reported by means of DLT-FECOM notification for dcc channel.
4. One instance of port STM-1 shall be deleted if *nvmname* of the addressed optical module equals **OM155** and the port attribute *istd* equals SDH. This shall be reported by means of DLT-STM1 notification of port.
5. One instances of port OC-3 shall be deleted if *nvmname* of the addressed optical module equals OM155 and the port attribute *istd* equals SONET. This shall be reported by means of DLT-OC3 notification of port.
6. One instance of port STM-4 shall be deleted if *nvmname* of the addressed optical module equals OM622 and the port attribute *istd* equals SDH. This shall be reported by means of DLT-STM4 notification of port.
7. One instances of port OC-12 shall be deleted if *nvmname* of the addressed optical module equals OM622 and the port attribute *istd* equals SONET. This shall be reported by means of DLT-OC12 notification of port.
8. One instance of port STM-16 shall be deleted if *nvmname* of the addressed optical module equals 'OM2G5' and the port attribute *istd* equals 'SDH'. This shall be reported by means of DLT-STM16 notification of port.
9. One instances of port OC-48 shall be deleted if *nvmname* of the addressed optical module optical equals OM2G5 and the port attribute *istd* equals SONET. This shall be reported by means of DLT-OC48 notification of port.

## DLT-EQPT (Socket): Delete equipment

10. One instance of port STM-64 shall be deleted if if *nvmname* of the addressed optical module equals OM10 and the port attribute *istd* equals SDH. This shall be reported by means of DLT-STM64 notification of port.
11. One instances of port OC-192 shall be deleted if *nvmname* of the addressed optical module equals OM10 and the port attribute *istd* equals SONET. This shall be reported by means of DLT-OC192 notification of port.
12. The parameters *nvmname*, *nvmqual* of the slot will be set to UNDEFINED, UNDEF, which will be reported by an ED-EQPT notification for slot.

**Group notification for STS-1/AU-3 tributaries**

Refer to the Detailed behavior of the “ENT-EQPT (slot): Enter equipment (slot)” (5-95) command for details on grouped notifications for STS1/AU3 tributaries.

**Disabling of PM monitor**

See Detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334) w.r.t PM impact as side of effect of port/tributary deletion.

**Example input/output**

This example shows a DLT-EQPT command de provisioning a socket:

```
DLT-EQPT:UNITE-NE:1-1-#-#-5-sc2:123456;
    UNITE-NE 98-01-01 08:00:00
M 123456 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the DLT-EQPT command.

**Validation rule: No cross-connections allowed**

Check of cross-connections involving the module to be removed.

Error code: SNVS - Status, Not in Valid State,  
cross-connections are still existing

**Validation rule: No XC loopbacks allowed**

Check of XC loopbacks involving the module to be removed.

Error code: SNVS - Status, Not in Valid State, XC loopbacks  
still exist

## DLT-EQPT (Socket): Delete equipment

**Validation rule: No facility loopbacks allowed**

Check of facility loopbacks involving the module to be removed.

Error code: SNVS - Status, Not in Valid State, facility loopbacks still exist

**Validation rule: No protection groups allowed**

Check of protection groups involving the module to be removed.

Error code: SNVS - Status, Not in Valid State, protection group still exist

**Validation rule: No transparent DCC connections**

Check of used transparent DCC connections involving the module to be removed.

Error code: SNVS - Status, Not in Valid State, transparent DCC connections are still existing

**Validation rule: Not used as timing reference**

Check of that none of the ports of the involving module is used as timing reference.

Error code: SNVS - Status, Not in Valid State, at least one port used as timing reference

**Validation rule: Not used for OW**

Check of that no connection to a OW port exists.

Error code: SNVS - Status, Not in Valid State, connection to OW port exists

**Validation rule: module must be plugged out**

Check of that the involved module is plugged out.

Error code: SNVS - Status, Not in Valid State, the Module is not plugged out

**Validation rule: Check whether system is in maintenance condition**

Deprovisioning shall not be allowed, when the system is in maintenance condition. (See “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).)

Error code: SNVS - Status, Not in Valid State, maintenance condition



DLT-EQPT (Socket): Delete equipment

**Validation rule: No test access session**

De-provisioning shall not be allowed if one or more tributaries on the port related to the socket are used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, Tributary used in test access session

**Related TL1 messages**

- “RTRV-EQPT (Socket): Retrieve equipment” (5-130)
- “ED-EQPT (Socket): Edit equipment” (5-142)
- “ENT-EQPT (Socket): Enter equipment” (5-138)
- “RTRV-STATE-EQPT (Socket): Retrieve equipment state” (5-157)



## DLT-EQPT notification

---

**Output format** The DLT-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: DLT-EQPT:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).

**Example output** This example shows a DLT-EQPT notification reporting the deletion of a socket:

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:DLT-EQPT:1-1-#-#-5-sc2"
;
```



## RTRV-STATE-EQPT (Socket): Retrieve equipment state

---

The RTRV-STATE-EQPT command shall retrieve the state information for sockets in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-STATE-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 See definition of input parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** If the RTRV-STATE-EQPT command completes successfully, then the following normal completion response shall be returned:

```

sid date time
M ctag COMPLD
  "aid[:spec_ block]"
  ... ..
  "aid[:spec_ block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

RTRV-STATE-EQPT (Socket): Retrieve equipment state

## Output parameters

### Command Parameter

1. aid – Access Identifier  
See definition of output parameter aid in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).

### Spec block parameters

1. holdst – Holder Status  
Each provisionable socket shall have an attribute indicating its equipage state.  
Type: alphanumeric value set.  
Range:
  - EMPTY, the system shall use the value “EMPTY” if no module is equipped in that socket.
  - VALID, the system shall use the value “Valid” if a module is equipped in that socket as provisioned.
  - UNEXPECTED, the system shall use the value “Unexpected” if a different module is equipped in that socket as provisioned or if the module is not acceptable for this socket.
  - UNKNOWN, the system shall use the value “Unknown” if a module is equipped in that socket with non-readable functional type or illegal values for the functional type.
 For further details w.r.t. state transitions for holder status - see SRD\_ConfigurationManagement.  
Default: EMPTY.

### Detailed behavior description

The system shall retrieve the output parameters as described above.

### Example input/output

This example shows a RTRV-STATE-EQPT command for a socket:

```
RTRV-STATE-EQPT:UNITE- NE:1-1-#-#-5-sc2:123456;
UNITE- NE 00-11-03 08:00:00
M 123456 COMPLD
"1- 1-#-#-5-sc2:holdst=VALID"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-STATE-EQPT command.

RTRV-STATE-EQPT (Socket): Retrieve  
equipment state

**Related TL1 messages**

- “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172)
- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)

**References** GR-833-CORE



## ED-STATE-EQPT notification

---

**Output format** The ED-STATE-EQPT notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STATE-EQPT:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-EQPT (Socket): Retrieve equipment” (5-130).

#### Spec block parameters

1. *holdst* – Holder Status  
See definition of output parameter *holdst* in “RTRV-STATE-EQPT (Socket): Retrieve equipment state” (5-157).

**Example output** This example shows an ED-STATE-EQPT notification reporting a plug out of a module from the socket:

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-STATE-EQPT:1-1-#-#-5-
sc2::holdst=EMPTY"
;
```



## Autonomous notifications

---

### Module plug in

#### Auto provisioning

If a module will be plugged into a not provisioned socket the socket will be auto provisioned to the plugged in module if the plugged in module type matches the acceptable type list of the socket. This shall be reported by means of the ED-EQPT (socket) notification. In addition also all entities will be created and updated as described in the detailed behaviour of the ENT-EQPT (socket) command. The update of the holder status of the socket will be reported by means of the ED-STATE-EQPT (socket) notification.

#### Unexpected, not acceptable, not recognizeable module handling

If an unexpected or not acceptable module or a module which inventory data can not be read is plugged into the socket only the holder status is changed and this is notified by an ED-STATE-EQPT(socket) notification. For all these cases alarms will be sent out in addition , either Optical Module Type Mismatch or Optical Module EPROM Access Fail.

#### Report of inventory data

In addition to the notifications above the system shall report an ED-EQPT (socket) notification for the parameters *name*, *qual*, *ssn*, *clei*, *comcde*, *eci*, *sln*. In case the inventory data can not be read the fields shall be reported as empty ("").

#### Auto provisioning of CPs with plugged in modules

If a circuit pack is auto provisioned which contains already plugged in modules or fixed installed modules or an already provisioned circuit pack will be plugged in where the modules are not provisioned but already plugged in or fixed mounted then is the behaviour the same as the module will be auto provisioned by plugging in a module into a socket of the circuit pack. It can be seen as two independent actions, which will be performed one after the other: (auto) provisioning of the circuit pack with following auto provisioning of modules.

### Module plug out

If a module is plugged out the holder state for this socket will change. This change shall be reported by means of an ED-STATE-EQPT (socket) notification for the holdst parameter. In addition to the notification above the system shall report an ED-EQPT (socket)

notification for the parameters *name*, *qual*, *comcde*, *ssn*, *clei*, *eci*, *sln*, *ssn*, *vendorname*, *vendoroui*, *vendorpartno*, *vendorrevlvl*, *vendorsln* with the defined default value (empty string ""). The parameter set in the ED-EQPT (socket) Notification depends on the EEPROM format of the Optical Module which is plugged out..

### **Circuit pack plug out with plugged in modules**

If a circuit pack will be plugged out with plugged in modules or with fixed mounted modules the system behaves like two independent actions, which will be performed one after the other: plug out of the plugged in or fixed mounted modules and plug out of the circuit pack. Regarding modules notifications will be sent as described for module plug out.





# Circuit pack

## Overview

---

**Purpose** This section includes the circuit pack level configuration messages.

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| RTRV-EQPT (CP): Retrieve equipment (circuit pack)             | <a href="#">5-164</a> |
| ENT-EQPT notification                                         | <a href="#">5-171</a> |
| ED-EQPT (CP): Edit equipment (circuit pack)                   | <a href="#">5-172</a> |
| ED-EQPT (cp) notification                                     | <a href="#">5-176</a> |
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## RTRV-EQPT (CP): Retrieve equipment (circuit pack)

---

The RTRV-EQPT command retrieves the provisioning information associated with a circuit pack. The RTRV-EQPT command retrieves the inventory information associated with other replaceable units.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format**      Command Syntax: RTRV-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
The AID of a circuit pack, the backplane or another replaceable unit (e.g. user panel or fan unit).  
Type: AID  
Range:
  - CpAID ::= UnivSlotAID-cp for universal circuit packs
  - CpAID ::= XCSlotAID-cp for cross-connect circuit packs
  - CpAID ::= CTLSlotAID-cp for controller circuit packs
  - CpAID ::= SlotAID-cp for any circuit pack  
The keyword *usa11* is allowed for Simple\_UnivSlotAID.  
The keyword *xca11* is allowed for Simple\_XCSlotAID.  
The keyword *ct1a11* is allowed for Simple\_CTLSlotAID.  
The keyword *a11* is allowed for Simple\_SlotAID
  - BackplaneAID for backplane. The keyword *a11* is not allowed for the backplane AID.
  - UserPanelAID for user panel. The keyword *a11* is not allowed for the user panel AID.
  - FanAID for fan. The keyword *fana11* is not allowed for FanAID.

- TimingInterfaceAID for TI Interface board. The keyword `tia11` is allowed for TimingInterfaceAID.
- CiCtlAID for CI-CTL Interface board. The keyword `a11` is not allowed for the CiCtl AID
- PowerAID for power interface The keyword `pia11` is allowed for PowerAID.
- EciAID for Electrical Connector interface The keyword `ecia11` shall be allowed for EciAID.

The keyword `a11` is not allowed on bay/shelf level.

Refer to the AID syntax description.

3. `ctag` – Correlation Tag

Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format**

In response to a valid RTRV-EQPT command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Output parameters**

1. `aid` – Access Identifier

The AID of a circuit pack, the backplane or another replaceable unit (e.g. user panel or fan unit).

Type: AID

Range:

- CpAID ::= UnivSlotAID-cp for universal circuit packs
- CpAID ::= XCSlotAID-cp for cross-connect circuit packs
- CpAID ::= CTLSlotAID-cp for controller circuit packs
- CpAID ::= SlotAID-cp for any circuit pack

The keyword `usa11` is allowed for Simple\_UnivSlotAID.  
The keyword `xca11` is allowed for Simple\_XCSlotAID.  
The keyword `cta11` is allowed for Simple\_CTLSlotAID.  
The keyword `a11` is allowed for Simple\_SlotAID

- BackplaneAID for backplane. The keyword `a11` is not allowed for the backplane AID.
- UserPanelAID for user panel. The keyword `a11` is not allowed for the user panel AID.
- FanAID for fan. The keyword `fan11` is not allowed for FanAID.
- TimingInterfaceAID for TI Interface board. The keyword `tia11` is allowed for TimingInterfaceAID.
- CiCtlAID for CI-CTL Interface board. The keyword `a11` is not allowed for the CiCtl AID
- PowerAID for power interface The keyword `pia11` is allowed for PowerAID.
- EciAID for Electrical Connector interface The keyword `ecia11` shall be allowed for EciAID.

Refer to the AID syntax description.

### **Spec block parameters**

1. name – Circuit Pack Name

Circuit Pack Name as stored in the EEPROM of the replaceable unit.

This parameter should be reported for the AID for the backplane, AID for the user panel , AID for CI-CTL, AID for TI-Interface, AID for the fan, AID for power interface, AID for ECI, if equipped and supported.

This parameter is not reported for a CpAID.

Type: value set.

Range: up to 12 characters.

2. qual – Circuit Pack Qualifier

Circuit Pack Qualifier as stored in the EEPROM of the replaceable unit.

This parameter should be reported for the AID for the backplane, AID for the user panel , AID for CI-CTL, AID for TI-Interface,

AID for the fan, AID for power interface, if equipped and supported.

This parameter is not reported for a CpAID.

Type: value set.

Range: up to 7 characters.

Note: The TL1-representation of the functional qualifier follows the rules as defined in SRD\_ConfigurationManagement:

- alphanumeric characters or the special character '-' only
- special characters like '/' and '.' to be omitted.

3. app – Apparatus Code

Apparatus code as stored in the EEPROM of the replaceable unit.

This parameter should be reported for the AID for the backplane, AID for the user panel , AID for CI-CTL, AID for TI-Interface, AID for the fan, AID for power interface, AID for ECI, if equipped and supported.

This parameter is not reported for a CpAID.

Type: alphanumeric string.

Range: up to 9 characters.

4. ssn – Series Number

Series number as stored in the EEPROM of the replaceable unit.

This parameter should be reported for the AID for the backplane, AID for the user panel , AID for CI-CTL, AID for TI-Interface, AID for the fan, AID for power interface, AID for ECI, if equipped and supported.

This parameter is not reported for a CpAID.

Type: value set.

Range: up to 6 characters.

Note: A dash (-) is used instead of a colon (:) for the series number in TL1.

5. clei – Common Language Equipment

Common Language Equipment as stored in the EEPROM of the replaceable unit.

This parameter should be reported for the AID for the backplane, AID for the user-panel , AID for CI-CTL, AID for TI-Interface, AID for the fan, AID for power interface, AID for ECI, if equipped and supported.

This parameter is not reported for a CpAID.

Type: value set.

Range: 10 characters.

6. eci – Equipment Catalog Item  
Equipment Catalog Item as stored in the EEPROM of the replaceable unit.  
This parameter should be reported for the AID for the backplane, AID for the user panel , AID for CI-CTL, AID for TI-Interface, AID for the fan, AID for power interface, AID for ECI, if equipped and supported.  
This parameter is not reported for a CpAID.  
Type: value set.  
Range: 6 digits.
7. sln – Serial Number  
Serial number as stored in the EEPROM on the circuit pack to identify the replaceable unit and indicate the date and place of manufacture.  
This parameter should be reported for the AID for the backplane, AID for the user panel , AID for CI-CTL, AID for TI-Interface, AID for the fan, AID for power interface, AID for ECI, if equipped and supported.  
This parameter is not reported for a CpAID.  
Type: Alphanumeric string.  
Range: 12 characters.
8. eqptpn – Equipment ASAP Profile Name  
The name of the current ASAP profile of type EQUIP-UNPROT of the circuit pack. This parameter is reported for a CpAID , PowerAID and EciAID.  
Type: Alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: up to 24 characters.  
Default: DEFAULT.
9. eqptprotpn – Protected Equipment ASAP Profile Name  
The name of the current ASAP profile of type EQUIP-PROT for the equipment.  
Option: This parameter is only reported for a CpAID.  
Type: Alphanumeric string.  
Range: up to 24 characters. A hyphen ( - ) is additionally allowed in the name.  
Default: DEFAULT

#### 10. vlantgmd – VLAN Tagging Mode

VLAN tagging mode of the circuit pack. This parameter is relevant only for circuit packs of type GE1 (i.e. nvmmname = GE1).

Type: value set.

Range:

- BCMD (default), for the backward compatible mode
- 802.1tag, for the VLAN tag based mode according to IEEE802.1Q.

#### Example input/output

The following shows the successful execution of the command for a replaceable unit (non CpAID):

```
RTRV-EQPT:UNITE-NE:1-1-usrpn1:123456;  
UNITE-NE 00-11-03 08:00:00  
M 123456 COMPLD  
"1-1-usrpn1:name=UPL,qual=-"  
"1-1-usrpn1:app=XYZ,ssn=S1-3,clei=WMMYABJDAA"  
"1-1-usrpn1:eci=437442,sln=00NB02160832  
;
```

The following shows the successful execution of the command for a circuit pack (CpAID):

```
RTRV-EQPT:UNITE-NE:1-1-#-#-5-cp:123456;  
UNITE-NE 00-11-03 08:00:00  
M 123456 COMPLD  
"1-1-#-#-5-cp:eqtpn=DEFAULT,eqtprotn=DEFAULT"  
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-EQPT command.

#### Related TL1 messages

- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)
- “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)
- “RTRV-STATE-EQPT (CP): Retrieve equipment state (circuit pack)” (5-179)

Circuit pack  
RTRV-EQPT (CP): Retrieve equipment  
(circuit pack)

*TLI messages - configuration management*

**References** GR-199-CORE





## ENT-EQPT notification

---

**Output format** The ENT-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-EQPT:*aid::spec\_block*

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition of input parameter *aid* in “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172).

#### Spec block parameters

1. eqtpn – Equipment ASAP Profile Name  
See definition of output parameter *eqtpn* in “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172).
2. eqtprotn – Protected Equipment ASAP Profile Name  
See definition of output parameter *eqtprotn* in “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172).
3. opstate – Operational State  
See definition of output parameter *opstate* in “RTRV-STATE-EQPT (CP): Retrieve equipment state (circuit pack)” (5-179).

### Example output

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ENT-EQPT:1-1-#-#-1-
cp::eqtpn=DEFAULT,eqtprotn=DEFAULT,opstate=OS_
ENABLE";
```



## ED-EQPT (CP): Edit equipment (circuit pack)

---

The ED-EQPT command modifies the provisioning values associated with equipment. Circuit packs must first be provisioned with the ENT-EQPT command or via auto provisioning before they can be modified.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**    Command Syntax: ED-EQPT:*tid:aid:ctag:::spec\_block;*

### Input parameters

#### Command parameters

1.    tid – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    aid – Access Identifier  
       The AID of an equipment.  
       Type: AID  
       Range:
  - CpAID ::= UnivSlotAID-cp for a universal circuit pack
  - CpAID ::= XCSlotAID-cp for a cross-connect circuit pack
  - CpAID ::= CTLSlotAID-cp for a controller circuit pack
  - CpAID ::= SlotAID-cp for any circuit pack.

The keyword *usa11* is not allowed for Simple\_UnivSlotAID.  
 The keyword *xca11* is not allowed for Simple\_XCSlotAID.  
 The keyword *ct1a11* is not allowed for Simple\_CTLSlotAID.  
 The keyword *a11* is not allowed for Simple\_SlotAID.  
 PowerAID for power interface: The keyword *pia11* is not allowed for PowerAID.  
 EciAID for ECI interface The keyword *ecia11* shall not be allowed for EciAID.
3.    ctag – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

### Spec block parameters

1. eqptpn – Equipment ASAP Profile Name  
See definition of output parameter *eqptpn* in “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164).
2. eqptprotpn – Protected Equipment ASAP Profile Name  
See definition of output parameter *eqptprotpn* in “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164)
3. vlantagmd - VLAN Tagging Mode  
See definition of output parameter vlantagmd in “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164).

**Output format** If the ED-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

The command modifies the value of *eqptpn*, *eqptprotpn* for a circuit pack entity as indicated by the *spec\_block* parameter.

The update is reported by means of an ED-EQPT notification for circuit pack.

#### Change of VLAN tagging mode: changing vlantagmd to 802.1TAG - update affected entities

If *nvmname* is GE1 a change of parameter vlantagmd from BCMD to 802.1TAG has the following side effects:

- The command shall create one instance of entity virtual switch. This shall be notified by a ENT-VRTSW notification
- All attributes of related EPORTs and VCGs shall remain unchanged.

#### Change of VLAN tagging mode: changing vlantagmd to BCMD - update affected entities

If *nvmname* is GE1 a change of parameter vlantagmd from 802.1TAG to BCMD has the following side effects: The command shall delete

the instance of entity virtual switch. This shall be notified by a DLT-VRTSW notification.

The following attributes of the related EPORTs shall be set to their default values:

- *cnprole, stdis, stpp, stpcost, rstpmd.*

The following attributes of the related VCGs shall be set to their default values:

- *cnprole, stdis, stpp, stpcost, rstpmd.*

All other attributes of related EPORTs and VCGs shall remain unchanged.

**Example input/output** ED-EQPT:UNITE-NE:1-1-#-#-1-cp:123456:::eqtpn=NOALARM;  
UNITE-NE 98-01-01 08:00:00  
M 123456 COMPLD  
;

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-EQPT command.

**Validation rule: Validate ASAP profile**

Check of the existence of the ASAP profile.

**Error code:** IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: Check whether VLAN lists are empty**

If *nvmname* is GE1 and the parameter vlantagmd is set to BCMD it shall be checked whether for the specified slot:

- the static VLAN lists (vvidls) of all EPORT entities are empty
- the static VLAN lists (vvidls) of all VCG entities are empty
- the default VLAN Id (dftvlan) of all EPORT entities is set to unavailable
- the default VLAN Id (dftvlan) of all VCG entities is set to unavailable.

**Errorcode:** SNVS - Status, Not in Valid State, static VLAN configuration not cleared

ED-EQPT (CP): Edit equipment (circuit pack)

**Related TL1 messages**

- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)
- “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164)
- “DLT-EQPT (slot): Delete equipment (slot)” (5-112)

**References** GR-199-CORE



## ED-EQPT (cp) notification

---

**Output format** The ED-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-EQPT:*aid::spec\_block*

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition of input parameter *aid* in “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164).

#### Spec block parameters

1. eqptpn – Equipment ASAP Profile Name  
See definition of output parameter *eqptpn* in “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164).
2. eqptprotpn – Protected Equipment ASAP Profile Name  
See definition of output parameter *eqptprotpn* in “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164).
3. vlantagmd - VLAN Tagging Mode  
See definition of output parameter *vlantagmd* in “RTRV-EQPT (CP): Retrieve equipment (circuit pack)” (5-164).

**Example output**

```
ED-EQPT:UNITE-NE:1-1-#-#-1-cp:123456:::eqptpn=NOALARM;
UNITE-NE 00-11-14 08:00:00
M 123456 COMPLD
;
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-EQPT:1-1-#-#-1-
cp:::eqptpn=NOALARM"
;
```



## DLT-EQPT notification

---

**Output format** The DLT-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax DLT-EQPT:*aid*::

### Output parameters

#### Command parameters

1. aid – Access Identifier

Description: AID of the deleted circuit pack.

Type: CpAID

Range:

- CpAID ::= UnivSlotAID-cp for universal circuit packs
- CpAID ::= XCSlotAID-cp for cross-connect circuit packs
- CpAID ::= CTLSlotAID-cp for controller circuit packs
- CpAID ::= SlotAID-cp for any circuit pack.

The keyword *usa11* is not allowed for Simple\_UnivSlotAID. The keyword *xca11* is not allowed for Simple\_XCSlotAID. The keyword *cta11* is not allowed for Simple\_CTLSlotAID. The keyword *a11* is not allowed for Simple\_SlotAID.

### Example output

```
DLT-EQPT:UNITE-NE:1-1-#-#-1:123456;
UNITE-NE 00-11-20 08:00:00
M 123456 COMPLD
;
UNITE-NE 00-11-20 8:01:03
A 610 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-EQPT:1-1-#-#-1-cp:::"
;
UNITE-NE 00-11-20 8:01:03
A 611 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-OC768:1-1-#-#-1-1:::"
;
UNITE-NE 00-11-20 8:01:03
A 612 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-VC3:1-1-#-#-1-1-1&&-768:::"
;
```

```
UNITE-NE 00-11-20 8:01:03
A 613 REPT DBCHG
  "Time=8-00-30,DATE=00-11-20:DLT-FECOM:1-1-#-#-
  1,LINE:::"
;
UNITE-NE 00-11-20 8:01:03
A 613 REPT DBCHG
  "Time=8-00-30,DATE=00-11-20:DLT-FECOM:1-1-#-#-
  1,SECTION:::"
;
UNITE-NE 00-11-20 8:01:03
A 613 REPT DBCHG
  "Time=8-00-30,DATE=00-11-20:ED-EQPT:1-1-#-#-
  1::nvmname=UNDEFINED,nvmqual=UNDEF:"
;
```





## RTRV-STATE-EQPT (CP): Retrieve equipment state (circuit pack)

---

The RTRV-STATE-EQPT command retrieves the state information for circuit packs in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-STATE-EQPT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
The AID of a circuit pack.  
Type: AID  
Range:
  - CpAID ::= UnivSlotAID-cp for universal circuit packs
  - CpAID ::= XCSlotAID-cp for cross-connect circuit packs
  - CpAID ::= CTLSlotAID-cp for controller circuit packs
  - CpAID ::= SlotAID-cp for any circuit pack.The keyword `usa11` is allowed for Simple\_UnivSlotAID  
The keyword `xca11` is allowed for Simple\_XCSlotAID  
The keyword `cta11` is allowed for Simple\_CTLSlotAID  
The keyword `a11` is allowed for Simple\_SlotAID  
Refer to the AID syntax description.
3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** If the RTRV-STATE-EQPT command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid:spec_block"
  ...
  ...
  "aid:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command Parameter

1. aid – Access Identifier

The AID of a circuit pack.

Type: AID

Range:

- CpAID ::= UnivSlotAID-cp for universal circuit packs
- CpAID ::= XCSlotAID-cp for cross-connect circuit packs
- CpAID ::= CTLSlotAID-cp for controller circuit packs
- CpAID ::= SlotAID-cp for any circuit pack.

The keyword `usa11` is not allowed for Simple\_UnivSlotAID.

The keyword `xca11` is not allowed for Simple\_XCSlotAID. The

keyword `cta11` is not allowed for Simple\_CTLSlotAID. The  
keyword `a11` is not allowed for Simple\_SlotAID.

The keyword `cta11` is not allowed for Simple\_CTLSlotAID.

The keyword `a11` is not allowed for Simple\_SlotAID.

The keyword `a11` is not allowed for Simple\_SlotAID.

### Spec block parameters

1. opstate – Operational State

Each circuit pack has a retrievable attribute indicating whether circuit pack is operational for the system internal communication.

Type: alphanumeric value set

Range:

- OS\_ENABLED
- OS\_DISABLED (default).

|                                      |                                                                                                  |
|--------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Detailed behavior description</b> | The system retrieves the state information for the CP as specified by the spec block parameters. |
|--------------------------------------|--------------------------------------------------------------------------------------------------|

**Example input/output**

```
RTRV-STATE-EQPT:UNITE-NE:1-1-#-#-2-cp:123456;  
    UNITE-NE 00-11-03 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-2-cp:opstate=OS_ENABLE"  
;
```

|                        |                                                                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Error responses</b> | Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STATE-EQPT command. |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Related TL1 messages**

- “ED-STATE-EQPT (system): Edit equipment state” (5-42)
- “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172)
- “ENT-EQPT (slot): Enter equipment (slot)” (5-95)

|                   |             |
|-------------------|-------------|
| <b>References</b> | GR-833-CORE |
|-------------------|-------------|



## ED-STATE-EQPT notification

---

**Output format** The ED-STATE-EQPT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STATE-EQPT:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STATE-EQPT (CP): Retrieve equipment state (circuit pack)” (5-179).

#### Spec block parameters

1. *opstate* – Operational State  
See definition of output parameter *opstate* in “RTRV-STATE-EQPT (CP): Retrieve equipment state (circuit pack)” (5-179).

### Example output

```
UNITE-NE 00-11-14 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-14:ED-STATE-EQPT:
1-1-#-#-1-cp:::opstate=OS_ENABLE";
```



## Autonomous notifications

---

**System start-up with default DB**

The system autonomously creates the following entities when starting up with the default database:

- backplane (backpl)
- user panel (upl)
- fan unit (fan)
- two TIs (tia and tib)
- CI-CTL (cictl)
- two PIs (pia and pib)
- CTL (ctlw-cp).

No notifications is sent.

**Change of the operational state**

A change of the operational state is autonomously reported by means of an ED-STATE-EQPT notification for this circuit pack.



# Port

## Overview

---

**Purpose** The term port is defined as physical interface of the EP155 and OPn packs including the 10-Gigabit Ethernet WANPHY interface variant. The ports of the OPn packs can work in SDH or SONET mode. Therefore SDH and SONET related commands are defined for physically identical ports. The ports of the EP155 packs can only work in SDH mode. Therefore only SDH related commands are defined for physically identical ports.

TL1 commands related to gigabit Ethernet LAN ports (GE1 packs) are described in the “Virtual switch” (7-130) section.

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## RTRV-STM1E: Retrieve STM1E port

---

The RTRV-STM1E command shall be used to retrieve all parameters related to the electrical STM1E port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P1  
                      Priority: 1  
                      Abortable: Yes

**Input format**      Command Syntax: RTRV-STM1E:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       Access Identifier of an STM1E port.  
       Type: AID.  
       Range: SPortAID of STM1E port.  
       The keyword *all* is allowed up to shelf level.
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format**      In response to a valid RTRV-STM1E command, the following output report is returned:

```

sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

## RTRV-STM1E: Retrieve STM1E port

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Output parameters****Command Parameter**

1. *aid* – Access Identifier  
Access Identifier of STM1 port.  
Type: AID.  
Range: SPortAID of STM1E port.

**Spec block parameters**

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
This parameter shows the rates of the port signals. For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter *inputsig* showing the Tributary Input Rate Signal List.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, or 4 representing VC3 or VC4.
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcthr* – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM1E: Retrieve STM1E port

8. femspm – Far-end Multiplex Section PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. fsflpbkstat – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. inputsig – Tributary Input Signal Rate List  
This parameter is a list of VCn rates across the port’s bandwidth.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3 or 4 representing VC3 or VC4.  
Default: 14.
12. istd – Interface Standard  
See definition of output parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
13. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborASTNNodeID – Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. neighborNodeID - Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. nemspm – MS Near-End PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

RTRV-STM1E: Retrieve STM1E port

19. **outql** – Outgoing timing quality  
See definition of output parameter **outql** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **pmmsfeses** – Performance Monitoring MS Far-End SES Threshold  
This parameter describes the Multiplex-Section Far-End SES threshold value. It indicates the number of errored blocks (SDH) per second to declare a second as severely errored.  
Type: numeric value set.  
Range: STM1: 1 – 192000.  
Default: for STM1: 28800.
21. **pmmsneses** – Performance Monitoring MS Near-End SES Threshold  
This parameter describes the Multiplex-Section Far-End SES threshold value. It indicates the number of errored blocks (SDH) per second to declare a second as severely errored.  
Type: numeric value set.  
Range: STM1: 1 – 192000.  
Default: for STM1: 28800.
22. **pmode** – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **pmrsneses** – Performance Monitoring RS Near-End SES Threshold  
This parameter describes the RS Near-End SES threshold value. It indicates the number of errored blocks (SDH) per second to declare a second as severely errored.  
Type: numeric value set.  
Range: 1 – 64000.  
Default: for STM1: 2400.
24. **portClass** – Port Class  
See definition of output parameter **portClass** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **portControl** – Port Control  
See definition of output parameter **portControl** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. **propagationDelay** - Propagation Delay  
See definition of output parameter **propagationDelay** in “RTRV-OC48: Retrieve OC48 port” (5-252).

## RTRV-STM1E: Retrieve STM1E port

27. ptype – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: STM1E.
28. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter *rsmstca* in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. rspm – RS PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter *rstimca* in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. rstimmon – RS TIM Monitor Enable  
See definition of output parameter *rstimmon* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. sdhpn – SDH ASAP  
See definition of output parameter *sdhpn* in “RTRV-STM4: Retrieve STM4 port” (5-201).
33. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. servcond – Service Condition  
See definition of output parameter *servcond* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
36. strc – Value of incoming J0  
See definition of output parameter *strc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. strcfmt – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. strcout – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM1E: Retrieve STM1E port

39. *strcst* - Status of incoming J0  
See definition of output parameter *strcst* in “RTRV-STM16: Retrieve STM16 port” (5-209).
40. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
41. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
42. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
43. *unequiposig* – Unequipped Output Signal List  
This parameter is a list of VCn rates across the port’s bandwidth. It determines the rate(s) of the “unequipped” signal that will be transmitted if there is no cross-connection. *unequiposig* and *inputsig* do not need the identical setting. Mixed rates for tx and rx side of the port are allowed.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3 or 4 representing VC3 or VC4.  
Default: 14.

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-STM1E command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-STM1E command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-STM1E:LT-UNITE:1-1-#-#-1-1:123456;
LT-UNITE 00-11-24 08:00:00
M 123456 COMPLD
"1-1-#-#-1-1:ptype=STM1E,frcdus=DISABLE,dexcthr=-
3,degthr=-6, pmode=MON,...,pmmsneses=15,pmrsneses=30"
;
```

## RTRV-STM1E: Retrieve STM1E port

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STM1E command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages** “ED-STM1E: Edit STM1E port” (5-279)

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-STM1: Retrieve STM1 port

---

The RTRV-STM1 command is used to retrieve all parameters related to the optical STM1 port.

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): P1  
                   Priority: 1  
                   Abortable: Yes

**Input format**    Command Syntax: RTRV-STM1:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       Access Identifier of an STM1 port.  
       Type: AID.  
       Range: SPortAID of STM1 port.  
       The keyword *all* is allowed up to shelf level.
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format**    In response to a valid RTRV-STM1 command, the following output report is returned:

```

sid date time
M ctag COMPLD
  "aid[:spec_block]"
    ...
    ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).



## Output parameters

### Command Parameter

1. aid – Access Identifier  
Access Identifier of STM1 port.  
Type: AID.  
Range: SPortAID of STM1 port.

### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. crstat – Constituent Rates Status list  
This parameter shows the rates of the port signals. For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter inputsig showing the Tributary Input Rate Signal List.  
Type: numeric value set.  
Range: NX-NX-NX-... N is the number of Xs. X can be 3 or 4 representing VC3 or VC4.
5. degthr – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. dexcthr – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. femspm – Far-end Multiplex Section PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM1: Retrieve STM1 port

10. **fsflpbkstat** – Far Side Facilitiy Loopback Status  
See definition of output parameter ***fsflpbkstat*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of VCn rates across the port’s bandwidth.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3 or 4 representing VC3 or VC4.  
Default: 14.
12. **istd** – Interface Standard  
See definition of output parameter ***istd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. **lpbk** – Loopback  
See definition of output parameter ***lpbk*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** - Neighbor Detection Mode  
See definition of output parameter ***ndetmd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. **neighborASTNNodeID** – Neighbor ASTN Node Id  
See definition of output parameter ***neighborASTNNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** - Neighbor Node Id  
See definition of output parameter ***neighborNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **neighborPortID** – Neighbor Port Id  
See definition of output parameter ***neighborPortID*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **nemspm** – MS Near-End PM Enable  
See definition of output parameter ***nemspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **opdis** – Optical Distance  
See definition of output parameter ***opdis*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **opwl** – Optical Wavelength  
See definition of output parameter ***opwl*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM1: Retrieve STM1 port

21. outql – Outgoing timing quality  
See definition of output parameter *outql* in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
This parameter describes the Line/Multiplex-Section Far-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.  
Type: numeric value set.  
Range (the range depends on the line rate but is identical for the corresponding SDH and SONET rates):
  - STM-1/OC-3: 1 – 192000.Default: The default values differ for SDH and SONET:
  - STM1: 28800
  - OC3: 154.
23. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
This parameter describes the Line/Multiplex-Section Near-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.  
Type: numeric value set.  
Range (the range depends on the line rate but is identical for the corresponding SDH and SONET rates):
  - STM-1/OC-3: 1 – 192000.Default: The default values differ for SDH and SONET and the different rates:
  - STM1: 28800
  - OC3: 154.
24. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM1: Retrieve STM1 port

25. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
This parameter describes the Section/RS Near-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.  
Type: numeric value set.  
Range (superset of allowed ranges for SDH and SONET): 1 – 64000.  
Default: The default values differ for SDH and SONET and the different rates:
- STM1: 2400
  - OC3: 155.
26. **portClass** – Port Class  
See definition of output parameter **portClass** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **portControl** – Port Control  
See definition of output parameter **portControl** in “RTRV-OC48: Retrieve OC48 port” (5-252).
28. **propagationDelay** - Propagation Delay  
See definition of output parameter **propagationDelay** in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. **ptype** – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: STM1.
30. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **rspm** – RS PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM1: Retrieve STM1 port

33. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
35. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. **strc** – Value of incoming J0  
See definition of output parameter ***strc*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
39. **strcfmt** – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
40. **strcout** – Value of outgoing J0  
See definition of output parameter ***strcout*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
41. **strcst** – Status of incoming J0  
See definition of output parameter ***strcst*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
42. **strcfmt** – Format of outgoing J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
43. **tcamd** – TCA mode  
See definition of output parameter ***tcamd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM1: Retrieve STM1 port

- 44. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 45. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-STM1 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-STM1 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-STM1:LT-UNITE:1-1-#-#-1-1:123456;
LT-UNITE 00-11-24 08:00:00
M 123456 COMPLD
"1-1-#-#-1-1:ptype=STM1,frcdus=DISABLE,dexcthr=-
3,degthr=-6, pmode=MON,...,pmmsneses=15,pmrsneses=30"
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STM1 command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages**

“ED-STM1: Edit STM1 port” (5-296)

**References**

GR-199-CORE (RTRV-*rr*)



## RTRV-STM4: Retrieve STM4 port

---

The RTRV-STM4 command is used to retrieve all parameters related to the optical STM4 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-STM4:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 Access Identifier of an STM4 port.  
 Type: AID.  
 Range: SPortAID of STM4 port.  
 The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-STM4 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command Parameter

1. aid – Access Identifier  
Access Identifier of STM-4 port.  
Type: AID.  
Range: SPortAID of STM-4 port.

### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. crstat – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM1E: Retrieve STM1E port” (5-187).  
N is the number of Xs. X can be 3, 4 or 4C representing VC3, VC4 or VC4-4C
5. degthr – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. dexcthr – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. femspm – Far-end Multiplex Section PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).



## RTRV-STM4: Retrieve STM4 port

10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of VCn rates across the port’s bandwidth.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4 or 4C representing VC3, VC4 or VC4-4C.  
Default: 44.
12. **istd** – Interface Standard  
See definition of output parameter **istd** in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborASTNNodeID** – Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** - Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. **nemspm** – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **opdis** – Optical Distance  
See definition of output parameter **opdis** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **opwl** – Optical Wavelength  
See definition of output parameter **opwl** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM4: Retrieve STM4 port

21. **outql** – Outgoing timing quality  
See definition of output parameter **outql** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
This parameter describes the Line/Multiplex-Section Far-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.  
Type: numeric value set.  
Range (the range depends on the line rate but is identical for the corresponding SDH and SONET rates):
  - STM-4/OC-12: 1 – 768000.Default: The default values differ for SDH and SONET:
  - STM4: 115200
  - OC12: 615.
23. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
This parameter describes the Line/Multiplex-Section Near-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.  
Type: numeric value set.  
Range (the range depends on the line rate but is identical for the corresponding SDH and SONET rates):
  - STM-4/OC-12: 1 – 768000.Default: The default values differ for SDH and SONET and the different rates:
  - STM4: 115200
  - OC3: 615.
24. **pmode** – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).

25. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
This parameter describes the Section/RS Near-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.  
Type: numeric value set.  
Range (superset of allowed ranges for SDH and SONET): 1 – 64000.  
Default: The default values differ for SDH and SONET and the different rates:
- STM4: 2400
  - OC12: 616.
26. **portClass** – Port Class  
See definition of output parameter **portClass** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **portControl** – Port Control  
See definition of output parameter **portControl** in “RTRV-OC48: Retrieve OC48 port” (5-252).
28. **propagationDelay** - Propagation Delay  
See definition of output parameter **propagationDelay** in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. **ptype** – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: STM4.
30. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **rspm** – RS PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM4: Retrieve STM4 port

33. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. **sdhpn** – SDH ASAP  
This parameter retrieves the ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SONET ASAP for the SONET ports of corresponding line rate (see definition of output parameter **SONET** in RTRV-OC12) to be compatible with current generation applications.  
Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: String with a maximum of 24 characters.  
Default: DEFAULT.
35. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. **strc** – Value of incoming J0  
See definition of output parameter ***strc*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
39. **strcfmt** – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
40. **strcout** – Value of outgoing J0  
See definition of output parameter ***strcout*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
41. **strcst** – Status of incoming J0  
See definition of output parameter ***strcst*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
42. **strcwfmt** – Format of outgoing J0  
See definition of output parameter ***strcwfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM4: Retrieve STM4 port

- 43. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 44. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 45. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM1E: Retrieve STM1E port” (5-187).  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4 or 4 representing VC3, VC4 or VC4-4C.  
Default: 44.

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-STM4 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-STM4 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-STM4:LT-UNITE:1-1-#-#-1-1:123456;
LT-UNITE 00-11-24 08:00:00
M 123456 COMPLD
"1-1-#-#-1-1:ptype=STM4,frcdus=DISABLE,dexctr=-
3,degthr=-6, pmode=MON,...,pmmsneses=15,pmrnsneses=30"
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STM4 command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages**

“ED-STM4: Edit STM4 port” (5-315)

Port

*TLI messages - configuration management*

RTRV-STM4: Retrieve STM4 port

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-STM16: Retrieve STM16 port

---

The RTRV-STM16 command is used to retrieve all parameters related to the optical STM16 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-STM16:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
Description: Access Identifier of an STM16 port.  
Type: AID.  
Range: SPortAID of STM16 port.  
The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-STM16 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command Parameter

1. aid – Access Identifier  
Access Identifier of STM16 port.  
Type: AID.  
Range: SPortAID of STM16 port.  
The keyword all is not allowed.

### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter **adminCost** in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
Measurement period for determining bursty errors. This parameter applies when **sdsfmode**=BURST.  
Type: numeric value set.  
Range: 2 to 10.  
Default: 7.
3. brstthr – Bursty Error Threshold  
Degradation threshold in a range from 5% to 50% with a resolution of 5% steps. This parameter applies when **sdsfmode**=BURST.  
Type: numeric value set.  
Range (as percentage ): 5, 10, ... 50.  
Default: 30.
4. crstat – Constituent Rates Status list  
See definition of output parameter **crstat** in “RTRV-STM1E: Retrieve STM1E port” (5-187).  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4, 4C or 16C representing VC3, VC4, VC4-4C or VC4-16C.
5. degthr – Signal Degrade Threshold  
Signal degrade threshold in a range from 10exp-5 to 10exp-9. This parameter applies when **sdsfmode**=POISSON.  
Type: numeric value set.  
Range (as exponents of 10): -5; -6; -7; -8; -9.  
Default: -6.



## RTRV-STM16: Retrieve STM16 port

6. **dexcthr** – Excessive Degrade Threshold  
Retrieving of the excessive degrade/signal failure threshold in exponent of 10. This parameter is available when **sdsfmode=POISSON**  
Type: numeric value set.  
Range (as exponent of 10): -3; -4; -5.  
Default: -3.
7. **exprstrc** – Value of Expected J0  
Expected regenerator section trace identifier.  
The parameter **expstrc** specifying the expected path trace is only relevant for the section trace supervision when the related trace read format **strcfmt** is set to 16 (16-byte-specific-string mode). If the parameter portClass is set to INNI and ndetmd is set to AUTO, the parameter exprstrc shall be autonomously set by the neighbour detection mechanism.  
Type: Hexadecimal digits  
Range: 16 byte string. Each byte is expressed as two hexadecimal digits (example value: 6D). The first byte value is in the range from 80 to FF. The other byte values are in the range from 00 to 7F.  
Default: 89hex followed by 15 bytes 00hex
8. **femspm** – Far-end Multiplex Section PM Enable  
Enable or disable of the performance monitoring of the multiplex section.  
Type: alphanumeric value set.  
Range:
  - ENABLE
  - DISABLE (default).
9. **frcdus** – Force to DUS  
Force DUS/DNU for sync messaging on optical interfaces. When provisioned for ENABLE, the message "do not use" will be transmitted from that optical interface.  
Type: alphanumeric value set.  
Range:
  - ENABLE , set a forced DUS/DNU
  - DISABLE (default), clear a forced DUS/DNU

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## 10. fsflpbkstat – Far Side Facility Loopback Status

This parameter specifies the current far-side facility loopback status of the considered output *aid*.

A far-side loopback means that the signal on the outgoing port is looped to the incoming port – this would thus correspond to loop via an external fibre cable, connecting the out-port with the in-port. If YES then the port is (far-side) loop-backed – if NO then there is no (far-side) loopback existing for the aid.

Note: not both loopbacks (*lpbk* and *fsflpbkstat*) can be set to YES at the same time.

Type: alphanumeric value set.

Range:

- YES
- NO (default).

## 11. inputsig – Tributary Input Signal Rate List

This parameter is a list of VCn rates across the port's bandwidth.

Type: numeric value set.

Range: NX-NX-NX-...

N is the number of Xs. X can be 3, 4, 4C or 16C representing VC3, VC4, VC4-4C or VC4-16C.

Default: The initial value of X is 4.

Example:

An STM-16 signal might be represented by 93-14-14C-243 which implies 9 VC3s, 1 VC4, 1 VC4-4C, 24 VC3s. The representation is not unique, for example it could also be 33-63-14-14C-243. Worst case of string length for STM16: 47 characters.

## 12. istd – Interface Standard

Each synchronous optical interface can be set to SDH or SONET.

The default value depends on the setting of the parameter *istddflt*.

Type: alphanumeric value set.

Range: SDH.

Default: As specified via *istddflt* on system level, see definition in "RTRV-EQPT (system): Retrieve Equipment (system)" (5-45).

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## 13. lpbk – Loopback

This parameter specifies the current near-side loopback status of the considered output *aid*.

A near-side loopback means that the signal on the incoming port is looped to the outgoing port. If YES then the port is (near-side) loop-backed – if NO then there is no (near-side) loopback existing for the port.

Type: alphanumeric value set.

Range:

- YES
- NO (default).

## 14. ndetmd – Neighbor Detection Mode

See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## 15. neighborASTNNodeID – Neighbor ASTN Node Id

See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## 16. neighborNodeID - Neighbor Node Id

See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## 17. neighborPortID – Neighbor Port Id

See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## 18. nemspm – MS Near-End PM Enable

Enable or disable near-end multiplex section (near-end line) performance monitoring.

Type: alphanumeric value set.

Range:

- ENABLE
- DISABLE (default).

## 19. opdis – Optical Distance

It shows the type of application for which the optical transmitter on this port is suited.

Type: alphanumeric value set

Range:

- INTRA-OFFICE
- SHORT-HAUL
- LONG-HAUL

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- VERY-LONG-HAUL
- OLS\_PASSIVE
- OLS\_400G
- OLS\_800G
- XTREME.

20. opwl – Optical Wavelength

Optical Wavelength in nanometers. It shows the type of optics that is used on this port.

Type: numeric value set.

Range (wavelength in [nm]): 0 (i.e. undefined), 1310; 1550; 1530.334 ... 1562.640 (i.e. C-Band); 1553.731 ... 1608.329 (i.e. L-Band). The value undefined is used e.g. in the context of optical modules if the retrieval of the inventory data is not yet supported.

21. outql – Outgoing timing quality

This parameter provides the outgoing quality level message on the S1 SDH MS overhead byte.

Type: alphanumeric value set

Range:

- PRC
- SSUL
- SSUT
- SEC
- DNU (default).

22. pmmsfes – Performance Monitoring Line/MS Far-End SES Threshold

This parameter describes the Line/Multiplex-Section Far-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.

Type: numeric value set.

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Range (the range depends on the line rate but is identical for the corresponding SDH and SONET rates):

- STM-16/OC-48: 1 – 3072000
- STM-64/OC-192: 1 – 12288000
- STM-256/OC-768: 1 – 49152000.

Default: The default values differ for SDH and SONET and the different rates:

- STM16: 460800
- STM64: 1843200
- STM256: 7372800
- SONET OC48: 2459
- SONET OC192: 8835
- SONET OC768: 39340.

23. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold

This parameter describes the Line/Multiplex-Section Near-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.

Type: numeric value set.

Range (the range depends on the line rate but is identical for the corresponding SDH and SONET rates):

- STM-16/OC-48: 1 – 3072000
- STM-64/OC-192: 1 – 12288000
- STM-256/OC-768: 1 – 49152000.

Default: The default values differ for SDH and SONET and the different rates:

- STM16: 460800
- STM64: 1843200
- STM256: 7372800
- SONET OC48: 2459
- SONET OC192: 8835
- SONET OC768: 39340.

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24. pmode – Port Mode

This parameter sets the mode of the port. In the case of AUTO the pmode state transitions to MON if the loss-of-signal alarm of this port is cleared.

Type: alphanumeric value set

Range:

- AUTO (default) indicates that, when a signal is detected at the port, then alarm monitoring will start.
- MON indicates that alarm monitoring is taking place on the port.
- NMON means that alarm monitoring is not occurring on the port.

25. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold

This parameter describes the Section/RS Near-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. The default value depends on the interface standard and may differ between SDH and SONET. If the interface standard is changed the current default value is not adapted automatically.

Type: numeric value set.

Range (superset of allowed ranges for SDH and SONET): 1 – 64000

Default: The default values differ for SDH and SONET and the different rates:

- SDH (all rates): 2400
- SONET OC48: 2392
- SONET OC192: 8554
- SONET OC768: 22776.

26. portClass – Port Class

See definition of output parameter *portClass* in “RTRV-OC48: Retrieve OC48 port” (5-252).

27. portControl – Port Control

See definition of output parameter *portControl* in “RTRV-OC48: Retrieve OC48 port” (5-252).

28. propagationDelay - Propagation Delay

See definition of output parameter *propagationDelay* in “RTRV-OC48: Retrieve OC48 port” (5-252).

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29. ptype – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: STM16.
30. rsmstca – RS/MS TCA Profile Pointer  
Definition of the active regenerator section/section and multiplex section/line threshold crossing alarm profile pointer.  
Type: alphanumeric string.  
Range: String with maximum of 24 characters.  
Default: DEFAULT0.
31. rspm – RS PM Enable  
Enable or disable regenerator section (section) performance monitoring.  
Type: alphanumeric value set.  
Range:
  - ENABLE
  - DISABLE (default).
32. rstimca – RS TIM Consequent Action Enable  
Regenerator Section Trace Identifier Mismatch consequent action enable (J0).  
This parameter is relevant only if the related trace read format *strcfmt* is set to 16 (16-byte-specific-string mode). If the parameter portClass is set to INNI and ndetmd is set to AUTO, the parameter rstimca shall be autonomously set by the neighbour detection mechanism.  
Type: alphanumeric value set.  
Range:
  - ENABLE (default): enable consequent action for TIM
  - DISABLE: disable consequent action for TIM.
33. rstimmon – RS TIM Monitor Enable  
Regenerator Section Trace Identifier Mismatch Monitor enable (J0).  
This parameter is relevant only if the related trace read format *strcfmt* is set to 16 (16-byte-specific-string mode). If the parameter portClass is set to INNI and ndetmd is set to AUTO, the parameter rstimmon shall be autonomously set by the neighbour detection mechanism.  
Type: alphanumeric value set.

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Range:

- ENABLE: enable TIM Monitor
- DISABLE (default): disable TIM Monitor

34. sdhpn – SDH ASAP

This parameter retrieves the ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SONET Alarm Severity Assignment Profile for the SONET ports (see definition of output parameter SONET in “RTRV-OC48: Retrieve OC48 port” (5-252)) to be compatible with current generation applications.

Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.

Range: String with a maximum of 24 characters.

Default: DEFAULT.

35. sdsfmode – Signal Degrade/Signal Fail Mode

The degraded state is detected in Burst or Poisson mode.

Type: alphanumeric value set.

Range:

- BURST (default)
- POISSON.

36. servcond – Service Condition

This parameter indicates its status concerning service involvement.

Type: alphanumeric value set.

Range:

- INSERVICE (default): Provisioning values for service are accepted
- OUTOFSERVICE: Provisioning values for service are not accepted.

37. srlgList – Shared Risk Link Group Identity List

See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).

38. strc – Value of incoming J0

This parameter shows the value of the Section Trace Identifier on the incoming section overhead J0 byte of a port. The length of the string depends on the value of the parameter *strcfmt*. The status of this value is contained in parameter *strcst*. If *strcst* indicates NORMAL, then strc contains a valid value. If *strcst*



## RTRV-STM16: Retrieve STM16 port

indicates UNAVAILABLE or AIS, then no incoming section trace identifier could be obtained by the system, e.g. due to a signal-fail condition, and the output parameter strc is omitted from the response.

Type: hexadecimal (each byte is expressed as two hexadecimal digits. An example of a byte is 6D).

Range: 1 byte string, 16 byte string, 64 byte string (dependent on the strcfmt parameter).

## 39. strcfmt – Format of incoming J0

The read format of J0, the incoming section trace (strc) and the expected section trace (exprstrc). If the parameter portClass is set to INNI and ndetmd is set to AUTO, the parameter strcfmt shall be autonomously set by the neighbour detection mechanism.

Type: numeric string

Range:

- 1: for specific repeating byte (SONET)
- 2 (default): for non-specific repeating byte (ITU/ETSI mode 2)
- 16: for 16 byte specific string (ITU/ETSI mode 1).
- 64: for 64 byte string (SONET).

## 40. strcout – Value of outgoing J0

This identifies the section trace message to be transmitted. The length is set with the *strcfmt* parameter.

If ITU/ETSI mode 2 is selected (strcfmt = 2) the outgoing J0 is fixed to 01hex. Therefore the setting of this parameter has no impact. If the parameter portClass is set to INNI, the system shall autonomously set the parameter strcout according to the actually outgoing J0.

Type: Hexadecimal digits.

Range:

- 1 byte string
- 16 bytes string
- 64 bytes string.

Dependent on the strcfmt parameter. Each byte is expressed as two hexadecimal digits (example value: 6D). Value constraint for 16 byte format: The first byte value is in the range from 80 to FF. The other byte values are in the range from 00 to 7F.

Default: 01Hex

## RTRV-STM16: Retrieve STM16 port

41. **strcst** – Status of incoming J0  
This parameter shows the status of the value of the incoming RS/Section Trace Identifier which is available with parameter *strc*.  
Type: alphanumeric value set.  
Range: NORMAL: strc contains a valid value; UNAVAILABLE: no value for strc could be obtained by the system; AIS: no value for strc due to an SF condition.
42. **strcwfmt** – Format of outgoing J0  
The write format of J0, the outgoing section trace (strcout). If the parameter portClass is set to INNI, the system shall autonomously set the parameter strcwfmt according to the actually outgoing J0.  
Type: numeric string  
Range:
- 1: for specific repeating byte (SONET)
  - 2 (default): for non-specific repeating byte (ITU/ETSI mode 2)
  - 16: for 16 byte specific string (ITU/ETSI mode 1).
  - 64: for 64 byte string (SONET).
43. **tcamd** – TCA mode  
This parameter shows the modus of the PM thresholding.  
Two thresholding methods are applicable:
- TR-only (also known as the implicit reset method)
  - TR-RTR (also known as the explicit reset method).
- Type: alphanumeric value set.  
Range: TR or TRRTR (default).

## RTRV-STM16: Retrieve STM16 port

44. *trbmd* – Tributary mode

If *trbmd* is FIXED, then *inputsig* constrains the cross-connection rates that can be entered for the port. If *trbmd* is ADAPTIVE, then input *inputsig* has no effect.

Type: alphanumeric value set.

Range: ADAPTIVE, FIXED.

Default: The initial value is defined as the *trbmdflt* parameter on system level, see definition in “RTRV-EQPT (system):

Retrieve Equipment (system)” (5-45) command.

45. *unequiposig* – Unequipped Output Signal List

See definition of output parameter *unequiposig* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

Range: NX-NX-NX-...

N is the number of Xs. X can be 3, 4, 4C or 16C representing VC3, VC4, VC4-4C or VC4-16C.

Default: 164 = all VC4.

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-STM16 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-STM16 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-STM16:LT-UNITE:1-1-#-#-1-1:123456;
LT-UNITE 00-11-24 08:00:00
M 123456 COMPLD
"1-1-#-#-1-1:ptype=STM16,frcdus=DISABLE,dexcthr=-
3,degthr=-6,pmode=MON,...,pmmsneses=15,pmrsneses=30"
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STM16 command.

**Validation rule: Check CCB against ptype and istd**

Check whether the CCB fits to *ptype* and *istd*.

RTRV-STM16: Retrieve STM16 port

**Error code:** ICNV - Input, Command Not Valid, Interface Standard does not match.

E.g. DENY, if a command with rr=STM16 is made on a OP2G5 port which is provisioned as *istd*=SONET and *pptype*=OC48.

**Related TL1 messages** “ED-STM16: Edit STM16 port” (5-334)

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-STM64: Retrieve STM64 port

---

The RTRV-STM64 command is used to retrieve all parameters related to the optical STM64 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-STM64:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 Access Identifier of an STM64 port.  
 Type: AID.  
 Range: SPortAID of ST-64 port.  
 The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-STM64 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command Parameter

1. aid – Access Identifier  
Type: AID  
Range: STM-64 port AID

### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. crstat – Constituent Rates Status list  
This parameter shows the rates of the port signals. For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter *inputsig* showing the Tributary Input Rate Signal List.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4, 4C, 16C or C64 representing VC3, VC4, VC4-4C, VC4-16C or VC-64C.
5. degthr – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. dexcthr – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. fec – FEC Enable  
Forward Error Correction Enable. Enable to include the FEC information in the outgoing signal.  
Type: alphanumeric value set.  
Range:

## RTRV-STM64: Retrieve STM64 port

DISABLE (only) for:

- OC192 / STM64 Intermediate Reach / Short Haul 1550 nm optics
- OC192 / STM64 intermediate reach / SH 32 colour passive WDM compatible optics
- OC192 / STM64 Long Reach / Long Haul 1550 nm optics
- OC192 / STM64 low cost intra office 1310nm optics
- Basic OC768 / STM256 low cost intra office (2 km).

ENABLE / DISABLE for:

- OC192 / STM64 OLS800G compatible 80 colour optics
- OC192 / STM64 OLS Xtreme compatible 128 colour optics 40G
- OC768 / STM256 Long Reach / Long Haul 1.5æ optics with strong FEC (80km)
- OC768 / STM256 OLS Xtreme compatible 64 colour optics (extended L band)

Default:

DISABLE (only) for:

- OC192 / STM64 Intermediate Reach / Short Haul 1550 nm optics
- OC192 / STM64 intermediate reach / SH 32 colour passive WDM compatible optics
- OC192 / STM64 Long Reach / Long Haul 1550 nm optics
- OC192 / STM64 low cost intra office 1310nm optics
- Basic OC768 / STM256 low cost intra office (2 km).

ENABLE / DISABLE for:

- OC192 / STM64 OLS800G compatible 80 colour optics
- OC192 / STM64 OLS Xtreme compatible 128 colour optics 40G
- OC768 / STM256 Long Reach / Long Haul 1.5æ optics with strong FEC (80km)
- OC768 / STM256 OLS Xtreme compatible 64 colour optics (extended L band)

9. femspm – Far-end Multiplex Section PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM64: Retrieve STM64 port

10. **frcdus** – Force to DUS  
Force DUS/DNU for sync messaging on optical interfaces. When provisioned for ENABLE, the message "do not use" will be transmitted from that optical interface.  
Type: alphanumeric value set.  
Range:
  - ENABLE: (set a forced DUS/DNU)
  - DISABLE (default): (clear a forced DUS/DNU).
11. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbkstat** in "RTRV-STM16: Retrieve STM16 port" (5-209).
12. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of VCn rates across the port's bandwidth.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4, 4C, 16C or C64 representing VC3, VC4, VC4-4C, VC4-16C or VC4-64C.  
Default: 644.
13. **istd** – Interface Standard  
See definition of output parameter **istd** in "RTRV-STM16: Retrieve STM16 port" (5-209).
14. **lpbk** – Loopback  
See definition of output parameter **lpbk** in "RTRV-STM16: Retrieve STM16 port" (5-209).
15. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in "RTRV-OC48: Retrieve OC48 port" (5-252).
16. **neighborASTNNodeID** – Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in "RTRV-OC48: Retrieve OC48 port" (5-252).
17. **neighborNodeID** - Neighbor Node Id  
See definition of output parameter **neighborNodeID** in "RTRV-OC48: Retrieve OC48 port" (5-252).
18. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in "RTRV-OC48: Retrieve OC48 port" (5-252).



## RTRV-STM64: Retrieve STM64 port

## 19. msrei – MS-REI mode

Definition: An special extended MS REI mode is standardized for STM64/OC192 interfaces. To support the interworking with older STM64/OC192 interfaces the single byte mode (non-extended) should also be supported.

Type: alphanumeric value set.

Range:

- SINGLE
- EXTENDED (default).

## 20. nemspm – MS Near-End PM Enable

See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 21. och – optical channel enable

Enable or disable of the optical channel. If the optical channel is disabled the further optical channel parameters don't have any impact on transmission.

Type: alphanumeric value set.

Range:

- for OP10 packs, which support to enable or disable OCH: ENABLE: enable optical channel; DISABLE: disable optical channel
- for OP40 packs, which cannot support OCH: DISABLE: disable optical channel
- for OP40 packs, which only support OCH: ENABLE: enable optical channel.

Default:

- for OP10 packs, which cannot support OCH: DISABLE
- for OP40 packs, which cannot support OCH: DISABLE
- for OP40 packs, which only support OCH: ENABLE.

## 22. opdis – Optical Distance

See definition of output parameter *opdis* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 23. opwl – Optical Wavelength

See definition of output parameter *opwl* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 24. outql – Outgoing timing quality

See definition of output parameter *outql* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM64: Retrieve STM64 port

25. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **polynomial** - Optical Channel Scrambling Polynomial  
This parameter is used by the Wavewrapper scrambler on the optical channel. This parameter is relevant only if the optical channel is enabled (och == ENABLE).  
Type: numeric value set.  
Range:  $1x7 + x + 1$ ;  $2x16 + x12 + x3 + x + 1$ .  
Default: 2.
30. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
32. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
33. **ptype** – Port Type  
Definition: This identifies the port type of the AID.  
It is derived from the functional name and functional qualifier of a circuit pack. If the functional qualifier indicates a pack with 10GE\_WANPHY interfaces the port type has the value 10GE\_WANPHY, else STM64.  
Type: alphanumeric value set.  
Range: STM64.

## RTRV-STM64: Retrieve STM64 port

34. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. **rspm** – RS PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter **rstimmon** in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. **sdhpn** – SDH ASAP  
This parameter retrieves the ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SONET Alarm Severity Assignment Profile for the SONET ports (see definition of output parameter SONET in “RTRV-OC192: Retrieve OC192 port” (5-261)) to be compatible with current generation applications.  
Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: String with a maximum of 24 characters.  
Default: DEFAULT.
39. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
40. **servcond** – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).
41. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter **srlgList** in “RTRV-OC48: Retrieve OC48 port” (5-252).
42. **strc** – Value of incoming J0  
See definition of output parameter **strc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
43. **strcfmt** – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM64: Retrieve STM64 port

- 44. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 45. *strcst* – Status of incoming J0  
See definition of output parameter *strcst* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 46. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 47. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 48. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 49. *unequiposig* – Unequipped Output Signal List  
This parameter is a list of VCn rates across the port’s bandwidth. It determines the rate(s) of the *unequipped* signal that will be transmitted if there is no cross-connection. *unequiposig* and *inputsig* do not need the identical setting. Mixed rates for *tx* and *rx* side of the port are allowed.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4, 4C, 16C or C64 representing VC3, VC4, VC4-4C, VC4-16C or VC4-64C.  
Default: 644 = all VC4.

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-STM64 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-STM64 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-STM64:LT-UNITE:1-1-#-#-1-1:123456;
LT-UNITE 00-11-24 08:00:00
M 123456 COMPLD
```

## RTRV-STM64: Retrieve STM64 port

```
"1-1-#-#-1-1:ptype=STM64,frcdus=DISABLE,dexcthr=-  
3,degthr=-6, pmode=MON,...,pmmsneses=15,pmrsneses=30"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STM64 command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages** “ED-STM64: Edit STM64 port” (5-357)

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-STM256: Retrieve STM256 port

---

The RTRV-STM256 command is used to retrieve all parameters related to the optical STM256 port.

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): P1  
                   Priority: 1  
                   Abortable: Yes

**Input format**    Command Syntax: RTRV-STM256:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       Description: Access Identifier of an STM256 port.  
       Type: AID.  
       Range: SPortAID of STM256 port.  
       The keyword *all* is allowed up to shelf level.
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format**    In response to a valid RTRV-STM256 command, the following output report is returned:

```

      sid date time
M   ctag COMPLD
      "aid[:spec_block]"
      ...
      ...
      "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## RTRV-STM256: Retrieve STM256 port

**Output parameters** The RTRV-STM256 command does not generate a REPT DBCHG message.

**Command parameters**

1. aid – Access Identifier  
Type: AID.  
Range: STM-256 port AID.

**Spec block parameters**

1. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
2. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. crstat – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM64: Retrieve STM64 port” (5-223).
4. degthr – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. dexcthr – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. fec – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
8. femspm – Far-end Multiplex Section PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. fsflpbkstat – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM256: Retrieve STM256 port

11. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of VCn rates across the port's bandwidth.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4, 4C, 16C, C64 representing VC3, VC4, VC4-4C, VC4-16C or VC64C.  
Default: 2564 (all VC4).
12. **istd** – Interface Standard  
See definition of output parameter **istd** in "RTRV-STM16: Retrieve STM16 port" (5-209).
13. **lpbk** – Loopback  
See definition of output parameter **lpbk** in "RTRV-STM16: Retrieve STM16 port" (5-209).
14. **nemspm** – MS Near-End PM Enable  
See definition of output parameter **nemspm** in "RTRV-STM16: Retrieve STM16 port" (5-209).
15. **och** – optical channel enable  
See definition of output parameter **och** in "RTRV-STM64: Retrieve STM64 port" (5-223).
16. **opdis** – Optical Distance  
See definition of output parameter **opdis** in "RTRV-STM16: Retrieve STM16 port" (5-209).
17. **opwl** – Optical Wavelength  
See definition of output parameter **opwl** in "RTRV-STM16: Retrieve STM16 port" (5-209).
18. **outql** – Outgoing timing Quality  
See definition of output parameter **outql** in "RTRV-STM16: Retrieve STM16 port" (5-209).
19. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in "RTRV-STM16: Retrieve STM16 port" (5-209).
20. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in "RTRV-STM16: Retrieve STM16 port" (5-209).
21. **pmode** – Port Mode  
See definition of output parameter **pmode** in "RTRV-STM16: Retrieve STM16 port" (5-209).



## RTRV-STM256: Retrieve STM256 port

22. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter **pmrsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **ptype** – Port Type  
Description: This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: STM256.
24. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **rspm** – RS PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter **rstimmon** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **sdhpn** – SDH ASAP  
This parameter retrieves the ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SONET Alarm Severity Assignment Profile for the SONET ports (see definition of output parameter SONET in “RTRV-OC768: Retrieve OC768 port” (5-269)) to be compatible with current generation applications.  
Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: String with a maximum of 24 characters.  
Default: DEFAULT.
29. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **servcond** – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-STM256: Retrieve STM256 port

31. *strc* – Value of incoming J0  
See definition of output parameter *strc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. *strcst* - Status of incoming J0  
See definition of output parameter *strcst* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. *unequiposig* – Unequipped Output Signal List  
This parameter is a list of VCn rates across the port’s bandwidth. It determines the rate(s) of the *unequipped* signal that will be transmitted if there is no cross-connection. *unequiposig* and *inputsig* do not need the identical setting. Mixed rates for *tx* and *rx* side of the port are allowed.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 3, 4, 4C, 16C, C64 representing VC3, VC4, VC4-4C, VC4-16C or VC4-64C.  
Default: 2564 = all VC4.

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-STM256 command does not generate a REPT DBCHG message.

## RTRV-STM256: Retrieve STM256 port

**Example input/output**

The following example shows the successful execution of a RTRV-STM256 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-STM256:LT-UNITE:1-1-#-#-4-1:123456;  
LT-UNITE 00-11-24 08:00:00  
M 123456 COMPLD  
"1-1-#-#-1-1:ptype=STM256,frcdus=DISABLE,dexctr=-  
3,degthr=-6, pmode=MON,.....,pmmsneses=15,pmrsneses=30"  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STM256 command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages**

“ED-STM256: Edit STM256 port” (5-380)

**References**

GR-199-CORE (RTRV-*rr*)



## RTRV-OC3: Retrieve OC3 port

---

The RTRV-OC3 command is used to retrieve all parameters related to the optical OC3 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-OC3:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 Access Identifier of an OC3 port.  
 Type: AID.  
 Range: SPortAID of OC3 port.  
 The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-OC3 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
    ...
    ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
Type: AID.  
Range: OC3 port AID.

### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. crstat – Constituent Rates Status list  
This parameter shows the rates of the port signals. It is the pointer processor setup if adaptive mode (*trbmd* = ADAPTIVE) is selected.  
When switching *trbmd* from FIXED to ADAPTIVE or when creating a port newly *crstat* inherits the current value of *inputsig* until the system delivers an up-to-date value from the pointer processor. If no value is available from the pointer processor the latest known value is retained.  
For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter *inputsig* showing the Tributary Input Rate Signal List.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1 or 3 representing STS1 or STS3C.
5. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. felpm – Far-end Line PM Enable  
See definition of output parameter *felpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

7. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **fsflpbkstat** – Far Side Facilitiy Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of STSn rates across the port’s bandwidth.  
If **trbmd** is FIXED, then **inputsig** constrains the cross-connection rates that can be entered for the port. If **trbmd** is ADAPTIVE, then **inputsig** is setable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1 or 3 representing STS1 or STS3C.  
Default: 31.  
Example: An O-3 signal might be represented by 31 which implies 3 STS1’s or 13 which implies 1 STS3C.
10. **istd** – Interface Standard  
See definition of output parameter **istd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
11. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. **ndetmd** – Neighbor Detection Mode  
See definition of ouput parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. **neighborASTNNodeID** – Neighbor ASTN Node Id  
See definition of ouput parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **neighborNodeID** - Neighbor Node Id  
See definition of ouput parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborPortID** – Neighbor Port Id  
See definition of ouput parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).

## RTRV-OC3: Retrieve OC3 port

16. nelpm – Near-End Line PM Enable  
See definition of output parameter *nelpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. opdis – Optical Distance  
See definition of output parameter *opdis* in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. opwl – Optical Wavelength  
See definition of output parameter *opwl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. outql – Outgoing timing quality  
See definition of output parameter *outql* in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
21. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
22. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. portClass – Port Class  
See definition of output parameter *portClass* in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. portControl – Port Control  
See definition of output parameter *portControl* in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. propagationDelay – Propagation Delay  
See definition of output parameter *propagationDelay* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## RTRV-OC3: Retrieve OC3 port

27. **ptype** – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: OC3.
28. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***sdthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC12: Retrieve OC12 port” (5-245).
36. **spm** – Section PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. **strc** – Value of incoming J0  
See definition of output parameter ***strc*** in “RTRV-STM16: Retrieve STM16 port” (5-209).



## RTRV-OC3: Retrieve OC3 port

39. **strcfmt** – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
40. **strcout** – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).
41. **strcst** - Status of incoming J0  
See definition of output parameter **strcst** in “RTRV-STM16: Retrieve STM16 port” (5-209)
42. **strcwfmt** – Format of outgoing J0  
See definition of output parameter **strcwfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
43. **trbmd** – Tributary mode  
See definition of output parameter **trbmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
44. **unequiposig** – Unequipped Output Signal List  
This parameter is a list of STSn rates across the port’s bandwidth. It determines the rate(s) of the “unequipped” signal that will be transmitted if there is no cross-connection.  
**unequiposig** and **inputsig** do not need to have the identical setting. Mixed rates for tx and rx side of the port are allowed. If **trbmd** is ADAPTIVE, then **unequiposig** is settable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1 or 3 representing STS1 or STS3C.  
Default: 3 1 = all STS1.
45. **z0outmode** – Mode of outgoing Z0 byte insertion  
See definition of output parameter **z0outmode** in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-OC3 command does not generate a REPT DBCHG message.

## RTRV-OC3: Retrieve OC3 port

**Example input/output** The following example shows the successful execution of a RTRV-OC3 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-OC3:LT-UNITE:1-1-#-#-1-1:123456;  
    LT-UNITE 00-11-27 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-1-1:ptype=OC3,frcdus=DISABLE,sfthr=-3,sdthr=-  
    6, pmode=MON,..... pmmsneses=15,pmrsneses=30"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-OC3 command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-OC12: Retrieve OC12 port

---

The RTRV-OC12 command is used to retrieve all parameters related to the optical OC12 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-OC12:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 Access Identifier of an OC12 port.  
 Type: AID.  
 Range: SPortAID of OC12 port.  
 The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-OC12 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
Type: AID.  
Range: OC-12 port AID.

### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. crstat – Constituent Rates Status list  
This parameter shows the rates of the port signals. It is the pointer processor setup if adaptive mode (*trbmd* = ADAPTIVE) is selected.  
When switching *trbmd* from FIXED to ADAPTIVE or when creating a port newly *crstat* inherits the current value of *inputsig* until the system delivers an up-to-date value from the pointer processor. If no value is available from the pointer processor the latest known value is retained.  
For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter *inputsig* showing the Tributary Input Rate Signal List.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3 or 12 representing STS1, STS3C or STS12C.
5. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. felpm – Far-end Line PM Enable  
See definition of output parameter *felpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-OC12: Retrieve OC12 port

7. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **fsflpbkstat** – Far Side Facililiy Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of STSn rates across the port’s bandwidth.  
If **trbmd** is FIXED, then **inputsig** constrains the cross-connection rates that can be entered for the port. If **trbmd** is ADAPTIVE, then **inputsig** is settable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3 or 12 representing STS1, STS3C or STS12C.  
Default: 121.  
Example:  
An OC12 signal might be represented by 31-33 which implies 3 STS1’s, 3 STS3C’s.
10. **istd** – Interface Standard  
See definition of output parameter **istd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
11. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. **ndetmd** – Neighbor Detection Mode  
See definition of ouput parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. **neighborASTNNodeID** – Neighbor ASTN Node Id  
See definition of ouput parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **neighborNodeID** - Neighbor Node Id  
See definition of ouput parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborPortID** – Neighbor Port Id  
See definition of ouput parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).

## RTRV-OC12: Retrieve OC12 port

16. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. opdis – Optical Distance  
See definition of output parameter *opdis* in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. opwl – Optical Wavelength  
See definition of output parameter *opwl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. outql – Outgoing timing quality  
See definition of output parameter *outql* in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM4: Retrieve STM4 port” (5-201).
21. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM4: Retrieve STM4 port” (5-201).
22. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. portClass – Port Class  
See definition of output parameter *portClass* in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. portControl – Port Control  
See definition of output parameter *portControl* in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. propagationDelay – Propagation Delay  
See definition of output parameter *propagationDelay* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## RTRV-OC12: Retrieve OC12 port

27. **ptype** – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: OC12.
28. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***sdthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***sfthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. **sonet** – SONET ASAP  
SONET Alarm Severity Assignment Profile. This parameter sets a SONET ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SDH ASAP for SDH ports of corresponding line rate (see “RTRV-STM4: Retrieve STM4 port” (5-201), output parameter ***sdhpn***) to be compatible with current generation applications.  
Type: alphanumeric string.  
Range: String with a maximum of 24 characters. A hyphen ( - ) is additionally allowed in the name.  
Default: DEFAULT.
36. **spm** – Section PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-OC12: Retrieve OC12 port

37. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter **srlgList** in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. **strc** – Value of incoming J0  
See definition of output parameter **strc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
39. **strcfmt** – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
40. **strcout** – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).
41. **strcst** – Status of incoming J0  
See definition of output parameter **strcst** in “RTRV-STM16: Retrieve STM16 port” (5-209).
42. **strcwfmt** – Format of outgoing J0  
See definition of output parameter **strcwfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
43. **trbmd** – Tributary mode  
See definition of output parameter **trbmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
44. **unequiposig** – Unequipped Output Signal List  
This parameter is a list of STSn rates across the port’s bandwidth. It determines the rate(s) of the “unequipped” signal that will be transmitted if there is no cross-connection.  
**unequiposig** and **inputsig** do not need to have the identical setting. Mixed rates for tx and rx side of the port are allowed. If **trbmd** is ADAPTIVE, then **unequiposig** is settable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3 or 12 representing STS1, STS3C or STS12C.  
Default: 121 = all STS1 (fixed).
45. **z0outmode** – Mode of outgoing Z0 byte insertion  
See definition of output parameter **z0outmode** in “RTRV-OC48: Retrieve OC48 port” (5-252).



## RTRV-OC12: Retrieve OC12 port

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-OC12 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-OC12 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-OC12:LT-UNITE:1-1-#-#-1-1:123456;  
LT-UNITE 00-11-27 08:00:00  
M 123456 COMPLD  
"1-1-#-#-1-1:ptype=OC12,frcdus=DISABLE,sfthr=-3,  
sdthr=-6, pmode=MON,..... pmmsneses=15,pmrsneses=30"  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-OC12 command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**References**

GR-199-CORE (RTRV-*rr*)



## RTRV-OC48: Retrieve OC48 port

---

The RTRV-OC48 command is used to retrieve all parameters related to the optical OC48 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-OC48:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 Access Identifier of an OC-48 port.  
 Type: AID.  
 Range: SPortAID of OC48 port.  
 The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-OC48 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
Type: AID.  
Range: OC-48 port AID.

### Spec block parameters

1. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
2. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. crstat – Constituent Rates Status list  
This parameter shows the rates of the port signals. It is the pointer processor setup if adaptive mode (*trbmd* = ADAPTIVE) is selected.  
When switching *trbmd* from FIXED to ADAPTIVE or when creating a port newly *crstat* inherits the current value of *inputsig* until the system delivers an up-to-date value from the pointer processor. If no value is available from the pointer processor the latest known value is retained.  
For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter *inputsig* showing the Tributary Input Rate Signal List.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3, 12, 48 representing STS1, STS3C, STS12C, STS48C.
4. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. felpm – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-OC48: Retrieve OC48 port

7. **fsflpbkstat** – Far Side Facilitiy Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of STSn rates across the port’s bandwidth.  
If **trbmd** is FIXED, then **inputsig** constrains the cross-connection rates that can be entered for the port. If **trbmd** is ADAPTIVE, then **inputsig** is settable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3, 12 or 48 representing STS1, STS3C, STS12C or STS48C.  
Default: 481.  
Example: An OC-48 signal might be represented by 91-13-112-241 which implies 9 STS1’s, 1 STS3C, 1 STS12C, 24 STS1’s.
9. **istd** – Interface Standard  
Each synchronous optical interface can be set to SDH or SONET.  
Type: alphanumeric value set.  
Range: SONET.  
Default: As specified via **istddflt** on system level, see definition in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).
10. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **ndetmd** – Neighbor Detection Mode  
This identifies the mode for neighbor detection for ports of portClass INNI. For all ports with other values of portClass, this parameter shall not be relevant, i.e. parameter can be retrieved and changed, but will internally not be evaluated until portClass is INNI.  
**ndetmd** is introduced specifically for use by NN application.  
Type: alphanumeric value set.  
Range: AUTO (default), MAN.

## RTRV-OC48: Retrieve OC48 port

## 12. neighborPortID – Neighbor Port Id

This identifies the identity of the adjacent port at the neighbor NE for ports of *portClass*=INNI. For all ports with other values of *portClass*, this parameter shall not be relevant, i.e. parameter can be retrieved and changed, but will internally not be evaluated until *portClass* is INNI. This parameter can only be modified, if *ndetmd*=MAN.

If *ndetmd*=MAN, this parameter shall indicate the value set by the operator. If *ndetmd*=AUTO, this parameter shall indicate the value detected via automatic neighbor detection.

**neighborPortID** is introduced specifically for use by NN application.

Type: Four dash separated numeric string.

Range: Each numeric string: 0...255.

Default: 0-0-0-0.

Interpretation: For UNITE ports the contents of this parameter shall be interpreted as SPort AID, a value of a-b-c-d shall be interpreted as the SPortAID a-b-#-#-c-d.

## 13. nelpm – Near-End Line PM Enable

See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 14. opdis – Optical Distance

It shows the type of application for which the optical transmitter on this port is suited.

Type: alphanumeric value set.

Range:

- VERY-SHORT-REACH
- SHORT-REACH
- INTERMEDIATE-REACH
- LONG-REACH
- VERY-LONG-REACH
- OLS\_PASSIVE
- OLS\_400G
- OLS\_800G
- XTREME.

## 15. opwl – Optical Wavelength

See definition of output parameter *opwl* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-OC48: Retrieve OC48 port

16. outql – Outgoing timing quality  
This parameter provides the outgoing quality level message on the S1 SONET line overhead byte.  
Type: alphanumeric value set.  
Range:
  - PRS
  - STU
  - ST2
  - ST3
  - DUS (default).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. portClass – Port Class  
This identifies the port class of the AID.  
*portClass* is used to specify ports for use by NN application and if so to also specify the role in which they will be used.  
Type: alphanumeric value set.  
Range: TRADITIONAL (default), INNI, EDGE.
22. ptype – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: OC48.

## RTRV-OC48: Retrieve OC48 port

23. **rstimca** – RS TIM Consequent Action Enable  
Regenerator Section Trace Identifier Mismatch consequent action enable (J0).  
This parameter is relevant only if the related trace read format **strcfmt** is set to 16 (16-byte-specific-string mode).  
Type: alphanumeric value set.  
Range:
  - ENABLE: enable consequent action for TIM
  - DISABLE (default): disable consequent action for TIM.
24. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter **rstimmon** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **sdsfmode** – Signal Degrade/Signal Fail Mode  
The degraded state is detected in Burst or Poisson mode.  
Type: alphanumeric value set.  
Range:
  - BURST
  - POISSON (default).
26. **sdthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **servcond** – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **sfthr** – Signal Failure Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter **remstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sonet** – SONET ASAP  
This parameter sets a SONET ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SDH Alarm Severity Assignment Profile for SDH ports (see “RTRV-STM16: Retrieve STM16 port” (5-209), output parameter **sdhpn**) to be compatible with current generation

applications.

Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.

Range: String with a maximum of 24 characters.

Default: DEFAULT.

31. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. *strc* – Value of incoming J0  
See definition of output parameter *strc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *strefmt* – Format of incoming J0  
See definition of output parameter *strefmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. *strcst* – Format of outgoing J0  
See definition of output parameter *strcst* in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. *trbmd* – Tributary mode  
If *trbmd* is FIXED, then *inputsig* constrains the cross-connection rates that can be entered for the port. If *trbmd* is ADAPTIVE, then input *inputsig* and *unequiposig* have no effect. See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209) for SDH equivalent.  
Type: alphanumeric value set.  
Range:
  - ADAPTIVE
  - FIXED.Default: The initial value is defined as the *trbmddflt* parameter on system level, see definition in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45) command.



## RTRV-OC48: Retrieve OC48 port

38. *unequiposig* – Unequipped Output Signal List

This parameter is a list of STSn rates across the port's bandwidth. It determines the rate(s) of the *unequipped* signal that will be transmitted if there is no cross-connection. *unequiposig* and *inputsig* do not need to have the identical setting. Mixed rates for *tx* and *rx* side of the port are allowed. If *trbmd* is ADAPTIVE, then *unequiposig* is settable and retrievable as in fixed mode but does not influence the port behavior.

Type: numeric value set.

Range: NX-NX-NX-...

N is the number of Xs. X can be 1, 3, 12 or 48 representing STS1, STS3C, STS12C or STS48C.

Default: 481 = all STS1 (fixed).

39. *z0outmode* – Mode of outgoing Z0 byte insertion

The Z0 insertion is configurable to support interworking with old SONET equipment for STS-M interfaces (M=3, 12, 48).

Type: alphanumeric value set.

Range:

- FIXEDCC (default): for inserting the fixed value CChex
- STSID: for inserting the STS-Id of the current frame.

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-OC48 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-OC48 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-OC48:LT-UNITE:1-1-#-#-1-1:123456;
```

```
LT-UNITE 00-11-27 08:00:00
```

```
M 123456 COMPLD
```

```
"1-1-#-#-1-1:ptype=OC48,frcdus=DISABLE,sfthr=-3,
```

```
sdthr=-6, pmode=M0N,..... pmmsneses=15,pmrsneses=30"
```

```
;
```

## RTRV-OC48: Retrieve OC48 port

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-OC48 command.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-OC192: Retrieve OC192 port

---

The RTRV-OC192 command is used to retrieve all parameters related to the optical OC192 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-OC192:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
Access Identifier of an OC192 port.  
Type: AID.  
Range: SPortAID of OC192 port.  
The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-OC192 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
Access Identifier of the OC192 port.  
Type: AID.  
Range: SPortAID of OC192 port.  
The keyword all is not allowed.

### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. crstat – Constituent Rates Status list  
This parameter shows the rates of the port signals. It is the pointer processor setup if adaptive mode (*trbmd* = ADAPTIVE) is selected.  
When switching *trbmd* from FIXED to ADAPTIVE or when creating a port newly *crstat* inherits the current value of *inputsig* until the system delivers an up-to-date value from the pointer processor. If no value is available from the pointer processor the latest known value is retained.  
For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter *inputsig* showing the tributary input rate signal list.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3, 12, 48, 192 representing STS1, STS3C, STS12C, STS48C, STS192C.
5. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. fec – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).

## RTRV-OC192: Retrieve OC192 port

7. **felpm** – Far-end Line PM Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM64: Retrieve STM64 port” (5-223).
9. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of STSn rates across the port’s bandwidth.  
If **trbmd** is FIXED, then **inputsig** constrains the cross-connection rates that can be entered for the port. If **trbmd** is ADAPTIVE, then **inputsig** is settable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3, 12, 48, 192 representing STS1, STS3C, STS12C, STS48C or STS192C.  
Default: 1921.
11. **istd** – Interface Standard  
See definition of output parameter **istd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **neighborASTNNodeID** – Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborNodeID** - Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).

## RTRV-OC192: Retrieve OC192 port

17. msrei – MS-REI mode  
See definition of output parameter *msrei* in “RTRV-STM64: Retrieve STM64 port” (5-223).
18. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. och – optical channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).
20. opdis – Optical Distance  
See definition of output parameter *opdis* in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. opwl – Optical Wavelength  
See definition of output parameter *opwl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. outql – Outgoing timing quality  
See definition of output parameter *outql* in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. polynomial - Optical Channel Scrambling Polynomial  
See definition of output parameter *polynomial* in “RTRV-STM64: Retrieve STM64 port” (5-223).

## RTRV-OC192: Retrieve OC192 port

28. portClass – Port Class  
See definition of output parameter **portClass** in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. portControl – Port Control  
See definition of output parameter **portControl** in “RTRV-OC48: Retrieve OC48 port” (5-252).
30. propagationDelay - Propagation Delay  
See definition of output parameter **propagationDelay** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. ptype – Port Type  
This identifies the port type of the AID.  
It is derived from the functional name and functional qualifier of a circuit pack. If the functional qualifier indicates a pack with 10GE\_WANPHY interfaces the port type has the value 10GE\_WANPHY, else OC192.  
Type: alphanumeric value set.  
Range: OC192.
32. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-OC48: Retrieve OC48 port” (5-252).
33. rstimmon – RS TIM Monitor Enable  
See definition of output parameter **rstimmon** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-OC48: Retrieve OC48 port” (5-252).
35. sdthr – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. servcond – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. sfthr – Signal Failure Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. sltca – Section and Line TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 39. sonet – SONET ASAP

This parameter sets a SONET ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SDH Alarm Severity Assignment Profile for SDH ports (see “RTRV-STM64: Retrieve STM64 port” (5-223), output parameter *sdhpn*) to be compatible with current generation applications.

Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.

Range: String with a maximum of 24 characters.

Default: DEFAULT.

## 40. spm – Section PM Enable

See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 41. srlgList – Shared Risk Link Group Identity List

See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## 42. strc – Value of incoming J0

See definition of output parameter *strc* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 43. strcfmt – Format of incoming J0

See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 44. strcout – Value of outgoing J0

See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 45. strcst - Status of incoming J0

See definition of output parameter *strcst* in “RTRV-STM16: Retrieve STM16 port” (5-209).

## 46. strcwfmt – Format of outgoing J0

See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).



## RTRV-OC192: Retrieve OC192 port

## 47. trbmd – Tributary mode

See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).

## 48. unequipsig – Unequipped Output Signal List

This parameter is a list of STSn rates across the port's bandwidth. It determines the rate(s) of the *unequipped* signal that will be transmitted if there is no cross-connection. *unequipsig* and *inputsig* do not need to have the identical setting. Mixed rates for tx and rx side of the port is allowed. If *trbmd* is ADAPTIVE, then *unequipsig* is settable and retrievable as in fixed mode but does not influence the port behavior.

Type: numeric value set.

Range: NX-NX-NX-...

N is the number of Xs. X can be 1, 3, 12, 48 or 192 representing STS1, STS3C, STS12C, STS48C or STS192C.

Default: 1921 = all STS1 (fixed).

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-OC192 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-OC192 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-OC192:LT-UNITE:1-1-#-#-1-1:123456;
```

```
LT-UNITE 00-11-27 08:00:00
```

```
M 123456 COMPLD
```

```
"1-1-#-#-1-1:ptype=OC192,frcdus=DISABLE,sfthr=-3,
sdthr=-6,emi=TRUE, pmode=MON,..... pmmsneses=15,
pmrsneses=30"
```

```
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-OC192 command.

RTRV-OC192: Retrieve OC192 port

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-OC768: Retrieve OC768 port

---

The RTRV-OC768 command is used to retrieve all parameters related to the optical OC768 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-OC768:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 Description: Access Identifier of an OC768 port.  
 Type: AID.  
 Range: SPortAID of OC768 port.  
 The keyword *all* is allowed up to shelf level.
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-OC768 command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## RTRV-OC768: Retrieve OC768 port

**Output parameters****Command parameters**

1. aid – Access Identifier  
Access Identifier of the OC768 port.  
Type: AID.  
Range: SPortAID of OC768 port.  
The keyword all is not allowed.

**Spec block parameters**

Refer to spec block description of the “RTRV-OC48: Retrieve OC48 port” (5-252) command

1. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
2. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. crstat – Constituent Rates Status list  
This parameter shows the rates of the port signals. It is the pointer processor setup if adaptive mode (*trbmd* = ADAPTIVE) is selected.  
When switching *trbmd* from FIXED to ADAPTIVE or when creating a port newly *crstat* inherits the current value of *inputsig* until the system delivers an up-to-date value from the pointer processor. If no value is available from the pointer processor the latest known value is retained.  
For fixed mode (*trbmd* = FIXED) this parameter is derived from the parameter *inputsig* showing the tributary input rate signal list.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3, 12, 48, 192 representing STS1, STS3C, STS12C, STS48C, STS192C.
4. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. fec – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).

## RTRV-OC768: Retrieve OC768 port

6. **felpm** – Far-end Line PM Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
This parameter is a list of STSn rates across the port’s bandwidth.  
If **trbmd** is FIXED, then **inputsig** constrains the cross-connection rates that can be entered for the port. If **trbmd** is ADAPTIVE, then **inputsig** is settable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3, 12, 48, 192 representing STS1, STS3C, STS12C, STS48C or STS192C.  
Default: 7681.
10. **istd** – Interface Standard  
See definition of output parameter **istd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
11. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. **nelpm** – Near-End Line PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. **och** – optical channel enable  
See definition of output parameter **och** in “RTRV-STM64: Retrieve STM64 port” (5-223).
14. **opdis** – Optical Distance  
See definition of output parameter **opdis** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **opwl** – Optical Wavelength  
See definition of output parameter **opwl** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-OC768: Retrieve OC768 port

16. outql – Outgoing timing quality  
See definition of output parameter *opdis* in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. ptype – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range: OC768.
22. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter *rstimca* in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. rstimmon – RS TIM Monitor Enable  
See definition of output parameter *rstimmon* in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. sdthr – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. servcond – Service Condition  
See definition of output parameter *servcond* in “RTRV-STM16: Retrieve STM16 port” (5-209).

27. **sfthr** – Signal Failure Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sonet** – SONET ASAP  
This parameter sets a SONET ASAP profile name of type PORT to which the designated AID points. The value of this parameter is identical to the SDH ASAP for SDH ports (see “RTRV-STM256: Retrieve STM256 port” (5-232), output parameter **sdhpn**) to be compatible with current generation applications.  
Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: String with a maximum of 24 characters.  
Default: DEFAULT.
30. **spm** – Section PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter **srlgList** in “RTRV-OC48: Retrieve OC48 port” (5-252).
32. **strc** – Value of incoming J0  
See definition of output parameter **strc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. **strcfmt** – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. **strcout** – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. **strcst** – Status of incoming J0  
See definition of output parameter **strcst** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. **strcwfmt** – Format of outgoing J0  
See definition of output parameter **strcwfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).

## RTRV-OC768: Retrieve OC768 port

37. **trbmd** – Tributary mode  
See definition of output parameter **trbmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. **unequippedsig** – Unequipped Output Signal List  
This parameter is a list of STSn rates across the port’s bandwidth. It determines the rate(s) of the **unequipped** signal that will be transmitted if there is no cross-connection. **unequippedsig** and **inputsig** do not need to have the identical setting. Mixed rates for **tx** and **rx** side of the port is allowed. If **trbmd** is ADAPTIVE, then **unequippedsig** is settable and retrievable as in fixed mode but does not influence the port behavior.  
Type: numeric value set.  
Range: NX-NX-NX-...  
N is the number of Xs. X can be 1, 3, 12, 48 or 192 representing STS1, STS3C, STS12C, STS48C or STS192C.  
Default: 7681 = all STS1 (fixed).

**Detailed behavior description**

The command retrieves the parameters as described above.

The RTRV-OC768 command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-OC768 command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-OC768:LT-UNITE:1-1-#-#-1-1:123456;
LT-UNITE 00-11-27 08:00:00
M 123456 COMPLD
"1-1-#-#-1-1:ptype=OC768,frcdus=DISABLE,sfthr=-3,
sdthr=-6,emi=TRUE, pmode=MON,..... pmmsneses=15,
pmrsneses=30"
;
```

**Error Responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-OC768 command.



RTRV-OC768: Retrieve OC768 port

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages** “ED-OC768: Edit OC768 port” (5-479)

**References** GR-199-CORE (RTRV-*rr*)



## RTRV-ALL: Retrieve all

---

The RTRV-ALL command is used to retrieve all parameters related to SDH/SONET ports.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P1  
                      Priority: 1  
                      Abortable: Yes

**Input format**    Command Syntax: RTRV-ALL:*tid:aid:ctag*[::*spec\_block*];

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       AID of SDH or SONET port.  
       Type: AID.  
       Range: SPortAID of STMn ports and OCn ports of supported rates.  
       The keyword *usa11* and *a11* is allowed for Simple\_SlotAID. The keyword *a11* is allowed for Simple\_SPortAID.
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *dyn* - Retrieve Dynamic Parameters  
       This parameter controls whether dynamic parameters shall be reported with the command reply or not.  
       The following output parameters of a port are affected:
  - *strc*
  - *strcst*.
       Type: alphanumeric value set.  
       Range: YES: Report dynamic parameters in the reply as well;  
       NO: Do not report dynamic parameters in the reply.  
       Default: NO.

RTRV-ALL: Retrieve all

**Output format** In response to a valid RTRV-ALL command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
Access Identifier of the SDH or SONET port.  
Type: AID.  
Range: SPortAID.  
The value all is not allowed.

### Spec block parameters

1. ptype – Port Type  
This identifies the port type of the AID.  
Type: alphanumeric value set.  
Range:
  - STM1E
  - STM1
  - STM4
  - STM16
  - STM64
  - STM256
  - OC3
  - OC12
  - OC48
  - OC192
  - OC768.

**Detailed behavior description**

The command retrieves the parameters as described above.  
The RTRV-ALL command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful execution of a RTRV-ALL command. Not all output parameters are listed (missing ones indicated by ... ):

```
RTRV-ALL:LT-UNITE:1-1-#-#-usa11-a11:123456;  
LT-UNITE 00-11-27 08:00:00  
M 123456 COMPLD  
"1-1-#-#-4-1:ptype=OC768,frcdus=DISABLE,sfthr=-3,  
sdthr=-6, pmode=MON,..... pmmsneses=15,pmrsneses=30"  
"1-1-#-#-5-1: ptype=STM64,frcdus=DISABLE,dexctr=-3,  
degthr=-6, pmode=MON,.....,pmmsneses=15,pmrsneses=30"  
;
```

**Error Responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-ALL command.

**Related TL1 messages**

- “RTRV-STM1E: Retrieve STM1E port” (5-187)
- “RTRV-STM1: Retrieve STM1 port” (5-194)
- “RTRV-STM4: Retrieve STM4 port” (5-201)
- “RTRV-STM16: Retrieve STM16 port” (5-209)
- “RTRV-STM64: Retrieve STM64 port” (5-223)
- “RTRV-STM256: Retrieve STM256 port” (5-232)
- “RTRV-OC3: Retrieve OC3 port” (5-238)
- “RTRV-OC12: Retrieve OC12 port” (5-245)
- “RTRV-OC48: Retrieve OC48 port” (5-252)
- “RTRV-OC192: Retrieve OC192 port” (5-261)
- “RTRV-OC768: Retrieve OC768 port” (5-269)

**References**

GR-199-CORE (RTRV-*rr*)



## ED-STM1E: Edit STM1E port

---

The ED-STM1E command is used to provision all parameters related to the electrical STM1E port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**      Command Syntax: ED-STM1E:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-STM1E: Retrieve STM1E port” (5-187).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM1E port is created, it is used when *sdfsmode*=BURST.
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM1E port is created, it is used when *sdfsmode*=BURST.

4. **degthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM1E port is created, it is used when **sdfsmode**=POISSON.
5. **dexcthr** – Excessive Degrade Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM1E port is created, it is used when **sdfsmode**=POISSON.
6. **exprstrc** – Value of Expected J0  
See definition of output parameter **exprstrc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. **femspm** – Far-end Multiplex Section Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
10. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
11. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **nemspm** – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).

15. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
16. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
17. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
19. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).  
**propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
21. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

26. *sdsfmode* – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. *servcond* – Service Condition  
See definition of output parameter *servcond* in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *unequipoisig* – Unequipped Output Signal List  
See definition of output parameter *unequipoisig* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

**Output format** If the ED-STM1E command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.



The modification is reported by means of an ED-STM1 notification for port (except for parameter *istd*; see below).

### Supply outgoing J0 trace value and format together

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### Supply outgoing J0 trace value according to format of outgoing J0

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### Disabling of PM Monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Changing TCA mode from TR-RTR to TR-only

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-STM1E:UNITE-NE:1-1-#-#-1-1:123456::INPUTSIG=14,
UNEQUIPOSIG=14;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ED-STM1E:1-1-#-#-1-1
::inputsig=14,unequiposig=14:"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-STM1E command.

### Validation rule: ASAP profile exists

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

Check of the existence of the TCA profile.

Error code: IDNV - Input, Data Not Valid, TCA profile does not exist

**Validation rule: inputsig consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: unequiposig consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when *portClass*=INNI**

Check that the *servcond* is not OUTOFSERVICE when *portClass*=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strcout*) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Check CCB against ptype and istd**

Check whether the CCB fits to ptype and SDH standard.

Error code: ICNV - Input, Command Not Valid, Interface Standard does not match

E.g. DENY, if a command with rr=OC3 is made on a EP155 port which is provisioned as ptype=STM1E.

**Related TL1 messages**

“RTRV-STM1E: Retrieve STM1E port” (5-187)

**References**

GR-199-CORE (ED-rr)



## ED-STM1E notification

---

**Output format** The ED-STM1E notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STM1:*aid::spec\_block*

### Output parameter

#### Command parameters

1. aid – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

#### Spec block parameters

1. adminCost - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. brstintvl – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. brstthr – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. crstat – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM1E: Retrieve STM1E port” (5-187).
5. degthr – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. dexcth – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. exprstrc – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. femspm – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. **frcdus** – Force to DUS  
See definition of output parameter ***frcdus*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter ***fsflpbkstat*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter ***inputsig*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
12. **lpbk** – Loopback  
See definition of output parameter ***lpbk*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter ***ndetmd*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter ***neighborASTNNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter ***neighborNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborPortID** – Neighbor Port Id  
See definition of output parameter ***neighborPortID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **nemspm** – MS Near-End PM Enable  
See definition of output parameter ***nemspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
19. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
20. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

21. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
22. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
30. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).

33. `strcfmt` – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. `strcout` – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. `strcfmt` – Format of outgoing J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. `tcamd` – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. `trbmd` – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. `unequiposig` – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

**Example input/output**

```
ED-STM1E:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=14,
UNEQUIPOSIG=14;
  UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
  UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
  "TIME=08-00-12,DATE=00-11-28:ED-STM1E:1-1-#-#-1-1
  ::inputsig=14,unequiposig=14:"
;
```



## ENT- STM1E notification

---

**Output format** The ENT-STM1E notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-STM1:*aid::spec\_block*

### Output parameter

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM1E: Retrieve STM1E port” (5-187).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).



9. **frcdus** – Force to DUS  
See definition of output parameter ***frcdus*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter ***fsflpbkstat*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter ***inputsig*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
12. **istd** – Interface Standard  
See definition of output parameter ***istd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. **lpbk** – Loopback  
See definition of output parameter ***lpbk*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter ***ndetmd*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter ***neighborASTNNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter ***neighborNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **neighborPortID** – Neighbor Port Id  
See definition of output parameter ***neighborPortID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. **nemspm** – MS Near-End PM Enable  
See definition of output parameter ***nemspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
20. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).

21. pmode – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1E: Retrieve STM1E port” (5-187).
23. propagationDelay - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. rspm – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. rstimmon – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. sdhpn – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
29. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. servcond – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
32. strcfmt – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 33. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 34. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM64: Retrieve STM64 port” (5-223).
- 37. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

**Example input/output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-STM1E:1-1-#-#-1-
1::servcond=DISABLE,inputsig=14,...,unequiposig=14"
;
```



## DLT- STM1E notification

---

**Output format**     The DLT-STM1E notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: DLT-STM1:*aid*

### Output parameter

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM1E: Retrieve STM1E port” (5-187).

### Example output

```
UNITE-NE 00-11-20 8:01:03
A 611 REPT DBCHG
  "Time=8-00-30,DATE=00-11-20:DLT-STM1E:1-1-#-#-4-1"
;
```



## ED-STM1E autonomous notifications

---

### **LOS for transmission port STM1E clears**

If LOS is cleared and current port mode is AUTO, then ***pmode*** is updated (new value: MON). This update is reported via ED-STM1E notification with parameter ***pmode***.

### **Change of neighbor Node and Neighbor Port Information**

If ***ndetmd***=AUTO a change of the attributes ***neighborNodeID*** or ***neighborPortID*** is notified by the related ED-STM1E notification.

If ***ndetmd***=AUTO a change of the attribute ***neighborASTNNodeID*** is notified by the related ED-STM1E notification.



## ED-STM1: Edit STM1 port

---

The ED-STM1 command is used to provision all parameters related to optical STM1 port.

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                   Priority: 1  
                   Abortable: no

**Input format**    Command Syntax: ED-STM1:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-STM1: Retrieve STM1 port” (5-194).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM1 port is created, it is used when *sdfsmode*=BURST.
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM1 port is created, it is used when *sdfsmode*=BURST.

4. **degthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM1 port is created, it is used when **sdfsmode**=POISSON.
5. **dexcthr** – Excessive Degrade Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM1 port is created, it is used when **sdfsmode**=POISSON.
6. **exprstrc** – Value of Expected J0  
See definition of output parameter **exprstrc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. **femspm** – Far-end Multiplex Section Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM1: Retrieve STM1 port” (5-194).
10. **istd** – Interface Standard  
See definition of output parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
11. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).

15. nemspm – MS Near-End PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
16. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
17. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
18. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. portClass – Port Class  
See definition of output parameter *portClass* in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. portControl – Port Control  
See definition of output parameter *portControl* in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. propagationDelay - Propagation Delay  
See definition of output parameter *propagationDelay* in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
23. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter *rsmstca* in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. rspm – RS PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter *rstimca* in “RTRV-STM16: Retrieve STM16 port” (5-209).



26. *rstimmon* – RS TIM Monitor Enable  
See definition of output parameter *rstimmon* in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. *sdhpn* – SDH ASAP  
See definition of output parameter *sdhpn* in “RTRV-STM1: Retrieve STM1 port” (5-194).
28. *sdsfmode* – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. *servcond* – Service Condition  
See definition of output parameter *servcond* in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM1: Retrieve STM1 port” (5-194).

**Output format**    If the ED-STM1 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Detailed behavior description

### Behavior

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-STM1 notification for port (except for parameter *istd*; see below).

### Switching of interface standard – Ignore other parameters

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

### Switching of interface standard – FM impact

The change of the interface standard of a port from SDH to SONET has the following impact related to fault management:

- all SDH alarms related to that port are cleared
- the corresponding SONET alarms are raised.

### Supply outgoing J0 trace value and format together

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### Supply outgoing J0 trace value according to format of outgoing J0

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### Switching of interface standard – Impact on port parameters

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Switching of interface standard – Side effects on tributaries

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Switching of interface standard – notification behavior

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Switching of interface standard – PM impact

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Disabling of PM monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Changing TCA mode from TR-RTR to TR-only

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-STM1:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=14,
UNEQUIPOSIG=14;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-28:ED-STM1:1-1-#-#-1-1
    ::inputsig=14,unequiposig=14:"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-STM1 command.

### Validation rule: ASAP profile exists

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no protection for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when this port is in an protection group.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when *portClass*=INNI**

Check that the *servcond* is not OUTOFSERVICE when *portClass*=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strcout* ) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages**    “RTRV-STM1: Retrieve STM1 port” (5-194)

**References**    GR-199-CORE (ED-*rr*)



## ED-STM1 notification

---

**Output format** The ED-STM1 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STM1:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM1: Retrieve STM1 port” (5-194).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM1: Retrieve STM1 port” (5-194).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcthr* – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. **frcdus** – Force to DUS  
See definition of output parameter ***frcdus*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter ***fsflpbkstat*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter ***inputsig*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
12. **istd** – Interface Standard  
See definition of input parameter ***istd*** in “ED-STM16: Edit STM16 port” (5-334).
13. **lpbk** – Loopback  
See definition of output parameter ***lpbk*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter ***ndetmd*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter ***neighborASTNNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter ***neighborNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **nemspm** – MS Near-End PM Enable  
See definition of output parameter ***nemspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
19. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
20. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).



21. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
22. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **propagationDelay** - Propagation Delay  
See definition of output parameter ***portpropagationDelayControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).

- 33. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
- 34. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
- 35. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
- 36. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
- 37. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
- 38. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM1:  
Retrieve STM1 port” (5-194).

**Example output**

```
ED-STM1:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=14,  
UNEQUIPOSIG=14;  
    UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;  
    UNITE-NE 00-11-28 08:00:30  
A 001 REPT DBCHG  
    "TIME=08-00-12,DATE=00-11-28:ED-STM1:1-1-#-#-1-1::  
    inputsig=14,unequiposig=14:"  
;
```



## ENT-STM1 notification

---

**Output format** The ENT-STM1 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-STM1:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM1: Retrieve STM1 port” (5-194).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM1: Retrieve STM1 port” (5-194).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcthr* – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM1: Retrieve STM1 port” (5-194).
12. **istd** – Interface Standard  
See definition of input parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
13. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. **nemspm** – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM1: Retrieve STM1 port” (5-194).
20. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM1: Retrieve STM1 port” (5-194).

21. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
23. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **propagationDelay** - Propagation Delay  
See definition of output parameter ***portpropagationDelayControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
31. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 33. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 34. strcfmt – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. strcout – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. strcfmt – Format of outgoing J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. tcamd – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 38. trbmd – Tributary Mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 39. unequiposig – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM1: Retrieve STM1 port” (5-194).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-STM1:1-1-#-#-1-
1::servcond=DISABLE,inputsig=14,...,unequiposig=14"
;
```



## DLT-STM1 notification

---

**Output format** The DLT-STM1 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-STM1:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM1: Retrieve STM1 port” (5-194).

**Example output**

```
UNITE-NE 00-11-20 8:01:03
A 611 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-STM1:1-1-#-#-4-1"
;
```



## ED-STM1 autonomous notifications

---

### LOS for transmission port STM1 clears

If LOS is cleared and current port mode is AUTO, then ***pmode*** is updated (new value: MON). This update is reported via ED-STM1 notification with parameter ***pmode***.

### Change of neighbor node and neighbor port Information

If ***ndetmd***=AUTO a change of the attributes ***neighborNodeID*** or ***neighborPortID*** is notified by the related ED-STM1 notification.

If ***ndetmd***=AUTO a change of the attribute ***neighborASTNNodeID*** is notified by the related ED-STM1 notification.





## ED-STM4: Edit STM4 port

---

The ED-STM4 command is used to provision all parameters related to optical STM4 port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**      Command Syntax: ED-STM4:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-STM4: Retrieve STM4 port” (5-201).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM4 port is created, it is used when *sdfsmode*=BURST.
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM4 port is created, it is used when *sdfsmode*=BURST.

4. **degthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM4 port is created, it is used when **sdfsmode**=POISSON.
5. **dexcthr** – Excessive Degrade Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM4 port is created, it is used when **sdfsmode**=POISSON.
6. **exprstrc** – Value of Expected J0  
See definition of output parameter **exprstrc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. **femspm** – Far-end Multiplex Section Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM4: Retrieve STM4 port” (5-201).
10. **istd** – Interface Standard  
See definition of output parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
11. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).

15. nemspm – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
16. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM4: Retrieve STM4 port” (5-201).
17. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM4: Retrieve STM4 port” (5-201).
18. pmode – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter **pmrsneses** in “RTRV-STM4: Retrieve STM4 port” (5-201).
20. portClass – Port Class  
See definition of output parameter **portClass** in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. portControl – Port Control  
See definition of output parameter **portControl** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. propagationDelay - Propagation Delay  
See definition of output parameter **portpropagationDelayControl** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. rspm – RS PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-STM16: Retrieve STM16 port” (5-209).

26. *rstimmon* – RS TIM Monitor Enable  
See definition of output parameter *rstimmon* in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. *sdhpn* – SDH ASAP  
See definition of output parameter *sdhpn* in “RTRV-STM4: Retrieve STM4 port” (5-201).
28. *sdsfmode* – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. *servcond* – Service Condition  
See definition of output parameter *servcond* in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. *strefmt* – Format of incoming J0  
See definition of output parameter *strefmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM4: Retrieve STM4 port” (5-201).

**Output format**    If the ED-STM4 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Detailed behavior description

### Behavior

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-STM16 notification for port (except for parameter *istd*; see below).

### Switching of interface standard – Ignore other parameters

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

### Switching of interface standard – FM impact

The change of the interface standard of a port from SDH to SONET has the following impact related to fault management:

- all SDH alarms related to that port are cleared
- the corresponding SONET alarms are raised.

### Supply outgoing J0 trace value and format together

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### Supply outgoing J0 trace value according to format of outgoing J0

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### Switching of interface standard – Impact on port parameters

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – Side effects on tributaries**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – notification behavior**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – PM impact**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Disabling of PM monitor**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Changing TCA mode from TR-RTR to TR-only**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Example input/output**

```
ED-STM4:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=14-33-24,UNEQUIPOSIG=14-33-24;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-28:ED-STM4:1-1-#-#-1-1::inputsig=14-33-24,unequiposig=14-33-24:"
;
```

### **Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-STM4 command.

### **Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV – Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

See definition of Validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no protection for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when this port is in an protection group.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when portClass=INNI**

Check that the *servcond* is not OUTOFSERVICE when portClass=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strcout* ) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.



**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Check CCB against ptype and istd**

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages** “RTRV-STM4: Retrieve STM4 port” (5-201)

**References** GR-199-CORE (ED-*rr*)



## ED-STM4 notification

---

**Output format** The ED-STM4 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STM4:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM4: Retrieve STM4 port” (5-201).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM4: Retrieve STM4 port” (5-201).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. **frcdus** – Force to DUS  
See definition of output parameter ***frcdus*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter ***fsflpbkstat*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter ***inputsig*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
12. **istd** – Interface Standard  
See definition of input parameter ***istd*** in “ED-STM16: Edit STM16 port” (5-334).
13. **lpbk** – Loopback  
See definition of output parameter ***lpbk*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter ***ndetmd*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter ***neighborASTNNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter ***neighborNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **neighborPortID** – Neighbor Port Id  
See definition of output parameter ***neighborPortID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. **nemspm** – MS Near-End PM Enable  
See definition of output parameter ***nemspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
20. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).

21. pmode – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
23. portClass – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. portControl – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. propagationDelay - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. rspm – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. rstimmon – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. sdhpn – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. servcond – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

33. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
34. strcfmt – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. strcout – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. strcwfmt – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. tcamd – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. trbmd – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
39. unequiposig – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM4: Retrieve STM4 port” (5-201).

**Example output**

```
ED-STM4:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=14-33-24,UNEQUIPOSIG=14-33-24;
  UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
  UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
  "TIME=08-00-12,DATE=00-11-28:ED-STM4:1-1-#-#-1-1::inputsig=14-33-24,unequiposig=14-33-24:"
;
```

□

## ENT-STM4 notification

---

**Output format** The ENT-STM4 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-STM4:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM4: Retrieve STM4 port” (5-201).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM4: Retrieve STM4 port” (5-201).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. **frcdus** – Force to DUS  
See definition of output parameter ***frcdus*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter ***fsflpbkstat*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter ***inputsig*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
12. **istd** – Interface Standard  
See definition of input parameter ***istd*** in “ED-STM4: Edit STM4 port” (5-315).
13. **lpbk** – Loopback  
See definition of output parameter ***lpbk*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter ***ndetmd*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter ***neighborASTNNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter ***neighborNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **neighborPortID** – Neighbor Port Id  
See definition of output parameter ***neighborPortID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. **nemspm** – MS Near-End PM Enable  
See definition of output parameter ***nemspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
20. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).

21. pmode – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
23. portClass – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. portControl – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. propagationDelay - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. rspm – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. rstimmon – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. sdhpn – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
31. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. servcond – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).



- 33. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 34. strcfmt – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. strcout – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. strcfmt – Format of outgoing J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. tcamd – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 38. trbmd – Tributary Mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 39. unequiposig – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM4: Retrieve STM4 port” (5-201).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-STM4:1-1-#-#-1-
1::servcond=DISABLE,inputsig=44,...,unequiposig=44"
;
```



## DLT-STM4 notification

---

**Output format**    The DLT-STM4 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-STM4:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM4: Retrieve STM4 port” (5-201).

**Example output**    UNITE-NE 00-11-20 8:01:03  
A 611 REPT DBCHG  
"Time=8-00-30,DATE=00-11-20:DLT-STM4:1-1-#-#-4-1"  
;



## ED-STM4 autonomous notifications

---

### LOS for transmission port STM4 clears

If LOS is cleared and current port mode is AUTO, then ***pmode*** is updated (new value: MON). This update is reported via ED-STM4 notification with parameter ***pmode***.

### Change of neighbor node and neighbor port Information

If ***ndetmd***=AUTO a change of the attributes ***neighborNodeID***, ***neighborPortID*** or ***neighborASTNNodeID*** is notified by the related ED-STM4 notification.



## ED-STM16: Edit STM16 port

---

The ED-STM16 command is used to provision all parameters related to optical STM16 port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**    Command Syntax: ED-STM16:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM16 port is created, it is used when *sdfsmode*=BURST.
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM16 port is created, it is used when *sdfsmode*=BURST.

4. **degthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM16 port is created, it is used when **sdfsmode**=POISSON.
5. **dexcthr** – Excessive Degrade Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM16 port is created, it is used when **sdfsmode**=POISSON.
6. **exprstrc** – Value of Expected J0  
See definition of output parameter **exprstrc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. **femspm** – Far-end Multiplex Section Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **istd** – Interface Standard  
Each synchronous optical interface can be set to SDH or SONET.  
Type: alphanumeric value set.  
Range:
  - SONET
  - SDH.Default: As specified via **istddflt** on system level, see definition in “RTRV-EQPT (system): Retrieve Equipment (system)” (5-45).
11. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).

13. neighborNodeID – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in  
“RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborPortID – Neighbor Port Id  
See definition of output parameter **neighborPortID** in  
“RTRV-OC48: Retrieve OC48 port” (5-252).
15. nemspm – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
16. pmmsfeses – Performance Monitoring Line/MS Far-End SES  
Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
17. pmmsneses – Performance Monitoring Line/MS Near-End SES  
Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
18. pmode – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
19. pmrsneses – Performance Monitoring Section/RS Near-End SES  
Threshold  
See definition of output parameter **pmrsneses** in “RTRV-STM16:  
Retrieve STM16 port” (5-209).
20. portClass – Port Class  
See definition of output parameter **portClass** in “RTRV-OC48:  
Retrieve OC48 port” (5-252).
21. portControl – Port Control  
See definition of output parameter **portControl** in “RTRV-OC48:  
Retrieve OC48 port” (5-252).
22. propagationDelay - Propagation Delay  
See definition of output parameter **propagationDelay** in  
“RTRV-OC48: Retrieve OC48 port” (5-252).
23. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16:  
Retrieve STM16 port” (5-209).

24. *rspm* – RS PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. *rstimca* – RS TIM Consequent Action Enable  
See definition of output parameter *rstimca* in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. *rstimmon* – RS TIM Monitor Enable  
See definition of output parameter *rstimmon* in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. *sdhpn* – SDH ASAP  
See definition of output parameter *sdhpn* in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. *sdsfmode* – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. *servcond* – Service Condition  
See definition of output parameter *servcond* in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *strcfmt* – Format of outgoing J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Output format** If the ED-STM16 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

**Behavior**

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-STM16 notification for port (except for parameter *istd*; see below).

**Switching of interface standard – Ignore other parameters**

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

**Switching of interface standard – FM impact**

The change of the interface standard of a port from SDH to SONET has the following impact related to fault management:

- all SDH alarms related to that port are cleared
- the corresponding SONET alarms are raised.

**Supply outgoing J0 trace value and format together**

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.



### Supply outgoing J0 trace value according to format of outgoing J0

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### Switching of interface standard – Impact on port parameters

Switching of interface standard I:

In detail the following attributes are influenced by switching of the *istd* from SDH to SONET (see also the related RTRV-OCn command for SONET parameter description):

- *brstintvl* is set to the default value
- *brstthr* is set to the default value
- *crstat* may change according to its semantics (see description of *crstat*)
- *femspm* is mapped to *felpm* (no changes)
- *inputsig* is set to the default value
- *istd* is set to SONET
- *nemspm* is mapped to *nelpm* (no changes)
- *rspm* is mapped to *spm* (no changes)
- *rstimca* is set to the default value for a SONET port
- *rstimmon* is set to the default value for a SONET port
- *sdhpn* is mapped to SONET (no changes)
- *sdsfmode* is set to the default value for a SONET port
- *sdthr* is set to the default value for a SONET port
- *sfthr* is set to the default value for a SONET port
- *trbmd* is set to the default value for a SONET port
- *unequiposig* is set to its default value
- *z0outmode* is set to its default value for a SONET port.

All other port parameters remain unchanged.

Switching of interface standard II:

In addition to the list of attributes above the following attributes are influenced by switching of the *istd* from SDH to SONET (see also the related RTRV-OCn command for SONET parameter description):

- *sltca* is set to the default value for a SONET port
- *tcamd* is set to the default value for a SONET port.

The attribute *tcamd* does not exist for SONET ports. SONET ports only support TR-only mode. Thus the mode must be internally set to TR-only.

Switching of interface standard III:

In addition to the list of attributes above the following attributes are influenced by switching of the *istd* from SDH to SONET (see also the related RTRV-OCn command for SONET parameter description):

- *pmmsfeses* is set to the default value for a SONET port
- *pmmsneses* is set to the default value for a SONET port
- *pmrsneses* is set to the default value for a SONET port.

#### Switching of interface standard – Side effects on tributaries

The switching of *istd* should not result in an deletion and recreation of the tributaries of a port. NE internally there are no differences between SDH and SONET.

In detail the following side-effects apply to the related tributary attributes when switching the *istd* from SDH to SONET (see also the related RTRV-OCn command for SONET parameter description):

- *brstintvl* is set to the default value for a SONET tributary
- *brstthr* is set to the default value for a SONET tributary
- *pse* (PDI-P parameter) is set to the default value for a SONET tributary
- *sdsfmode* is set to the default value for a SONET tributary.

#### Switching of interface standard – Side effects on tributaries II

In addition to the list of attributes above the following side-effects apply to the related tributary attributes when switching the *istd* from SDH to SONET (see also the related RTRV-OCn command for SONET parameter description):

- *degthr* is set to the default value for an SONET tributary
- *dexcthr* is set to the default value for an SONET tributary
- *ptca* shall be set to the default value for a SONET tributary
- *tcamd* is set to the default value for a SONET tributary.

The attribute *tcamd* does not exist for SONET ports. SONET ports only support "TR-only" mode. Thus the mode must be internally set to "TR-only".

### Switching of interface standard – Side effects on tributaries III

In addition to the list of attributes above the following side-effects apply to the related tributary attributes when switching the *istd* from SDH to SONET (see also the related RTRV-OCn command for SONET parameter description):

- *pmhpneses* is set to the default value for an SONET tributary
- *pmhpfeses* is set to the default value for an SONET tributary.

The attribute *tcamd* does not exist for SONET ports. SONET ports only support "TR-only" mode. Thus the mode must be internally set to "TR-only".

### Switching of interface standard – notification behavior for port attributes

When changing the interface standard *istd* using the ED-STMn command all resulting parameter changes are reported by ED-OCn notifications of the related port rate. This is valid for the parameter *istd* itself as well as for all other parameters which might change as a consequence of changing the interface standard.

### Switching of interface standard – notification behavior for tributary attributes

When changing the interface standard *istd* using the ED-STMn command all resulting tributary parameter changes are reported by ED-STS1 notifications.

For efficiency reasons the ED-STS1 notifications shall be sent out as a single notification using a range over the aid which depends on the port rate of the associated port, i.e. the Simple\_STS1NumAID field in the STS1NumAID is set to

- 1 - 3, in case of an STM1/OC3 port
- 1 - 12, in case of an STM4/OC12 port
- 1 - 48, in case of an STM16/OC48 port
- 1 - 192, in case of an STM64/OC192 port
- 1 - 768, in case of an STM256/OC768 port.

### Switching of interface standard - notification behavior for active TCA events

If the changing of the interface standard *istd* to SONET includes an change of *tcamd* from TR-RTR to TR-only (SONET default value), then all active TCA events of the related entities must be cleared.

### Switching of interface standard – PM impact

The change of interface standard has the following impacts w.r.t. existing PM registers:

1. all current bins related to the port will be reset
2. all history bins related to the port remain unchanged
3. all current bins related to tributaries being a member of the port will be reset
4. all history bins related to tributaries being a member of the port remain unchanged.

Retrieving the bins after switching the interface standard may result in a strange reporting behavior:

- When switching the interface standard to SONET the periods before the switch contain SDH-related parameters and values even though the port is addressed as a SONET port.
- When switching the interface standard to SDH the periods before the switch contain SONET-related parameters and values even though the port is addressed as a SDH port.

### Disabling of PM monitor

The disabling of a PM monitor shall have the following impacts w.r.t. existing PM registers:

1. stop PM counting
2. all current bins related to the PM monitor shall be deleted
3. all history bins related to the PM monitor shall be deleted

The term PM monitor has the same semantics as the term PM package as used in SRD\_PerformanceMonitoring. The number of PM monitors is determined by means of the number of *pm enable attributes*.

PM monitors can be disabled explicitly by means of the *pm enable* attribute or are implicitly disabled as part of a port/tributary deletion.

Additional to the above listed impacts (ID 52924) the disabling of a PM monitor shall have the following impacts: the system has to clear all active TCA events of the deleted PM monitor if TCA mode TR-RTR was selected.

### Changing TCA mode from TR-RTR to TR-only

The change of tcamd from TR-RTR (also known as the explicit reset method) to TR-only (also known as the implicit reset method) has the

impact, that all active TCA events of the related entity must be cleared.

**Example input/output**

```
ED-STM16:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ED-STM16:1-1-#-#-1-1::inputsig=74-33-84,unequiposig=74-33-84:"
;
```

**Error responses**

Refer to the "RTRV-HDR: Retrieve header" (5-8) command Error responses section. The error responses listed there also apply to the ED-STM16 command.

**Validation rule: Enough bandwidth reserved for 2F protection group**

Check of the tributary rate (*inputsig/unequiposig*) if the port is member of a 2f protection group. Then the assigned bandwidth will be max. half of the port's bandwidth.

Error code: IDNV - Input, Data Not Valid, Assigned bandwidth exceeds half port's bandwidth

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no protection for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when this port is in an protection group

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when *portClass=INNI***

Check that the *servcond* is not OUTOFSERVICE when *portClass=INNI*.

Error code: SNVS - Status, Not in Valid State, can not disable servcond for INNI ports.

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc out*) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Check CCB against *ptype* and *istd***

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Validation rule: TCA profile exists**

Check of the existance of the TCA profile.

Error code: IDNV - Input, Data Not Valid, TCA profile does not exist

**Related TL1 messages**    “RTRV-STM16: Retrieve STM16 port” (5-209)

**References**    GR-199-CORE (ED-*rr*)





## ED-STM16 notification

---

**Output format** The ED-STM16 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STM16:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM16: Retrieve STM16 port” (5-209).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcthr* – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. fsflpbkstat – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
13. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. nemspm – MS Near-End PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).

21. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 33. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 34. strcfmt – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. strcout – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. strcwfmt – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. trbmd – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 38. tcamd – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 39. unequiposig – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Example output**

```
ED-STM16:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;  
UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;  
UNITE-NE 00-11-28 08:00:30  
A 001 REPT DBCHG  
"TIME=08-00-12,DATE=00-11-28:ED-STM16:1-1-#-#-1-1::inputsig=74-33-84,unequiposig=74-33-84:"  
;
```



## ENT-STM16 notification

---

**Output format** The ENT-STM16 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-STM16:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM16: Retrieve STM16 port” (5-209).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. **istd** – Interface Standard  
See definition of input parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
13. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **neighborPortID** – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. **nemspm** – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).

21. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 33. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 34. strcfmt – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. strcout – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. strcfmt – Format of outgoing J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. tcamd – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 38. trbmd – Tributary Mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 39. unequiposig – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-STM16:1-1-#-#-1-
1::servcond=DISABLE,inputsig=164,...,unequiposig=164"
;
```





## DLT-STM16 notification

---

**Output format**     The DLT-STM16 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-STM16:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Example output**     UNITE-NE 00-11-20 8:01:03  
A 611 REPT DBCHG  
"Time=8-00-30,DATE=00-11-20:DLT-STM16:1-1-#-#-4-1"  
;



## ED-STM16 autonomous notifications

---

**LOS for transmission port  
STM16 clears**

If LOS is cleared and current port mode is AUTO, then ***pmode*** is updated (new value: MON). This update is reported via ED-STM16 notification with parameter ***pmode***.

**Change of neighbor node  
and neighbor port  
Information**

If ndetmd=AUTO a change of the attributes ***neighborNodeID***, ***neighborPortID*** or ***neighborASTNNodeID*** is notified by the related ED-STM16 notification.



## ED-STM64: Edit STM64 port

---

The ED-STM64 command is used to provision all parameters related to optical STM64 port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**      Command Syntax: ED-STM64:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-STM64: Retrieve STM64 port” (5-223).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM64 port is created, it is used when *sdfsmode*=BURST.
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       The setting of this parameter is allowed when the related STM64 port is created, it is used when *sdfsmode*=BURST.

4. **degthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM64 port is created, it is used when **sdfsmode**=POISSON.
5. **dexcthr** – Excessive Degrade Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM64 port is created, it is used when **sdfsmode**=POISSON.
6. **exprstrc** – Value of Expected J0  
See definition of output parameter **exprstrc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. **fec** – FEC Enable  
Forward Error Correction Enable. Enable to include the FEC information in the outgoing signal.  
The FEC functionality is strongly related to the used frame format. The FEC is supported by the OCh frame format (LU proprietary solution) and G.709 frame format.  
OCh frame format: For cards, which support the OCh frame format, the FEC functionality is directly coupled to the activation/deactivation of the OCh layer. This means, that the **fec** parameter is not considered by these cards and **fec** is implicit switched on/off by switching on/off **och** .  
G.709 frame format: For cards, which support the G.709 frame format, the FEC functionality can separately be switched on and off, if the G.709 frame format is selected by **och**= enable.  
As long as the G.709 frame format is not supported, the **fec** parameter would not be needed.  
Type: alphanumeric value set  
Range: ENABLE, DISABLE
8. **femspm** – Far-end Multiplex Section Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM64: Retrieve STM64 port” (5-223).
10. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM64: Retrieve STM64 port” (5-223).

11. **istd** – Interface Standard  
See definition of input parameter ***istd*** in “ED-STM16: Edit STM16 port” (5-334).
12. **msrei** – MS-REI Mode  
See definition of output parameter ***msrei*** in “RTRV-STM64: Retrieve STM64 port” (5-223).
13. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter ***ndetmd*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. **neighborASTNNodeID** - Neighbor ASTN Node Id  
See definition of output parameter ***neighborASTNNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. **neighborNodeID** – Neighbor Node Id  
See definition of output parameter ***neighborNodeID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. **neighborPortID** – Neighbor Port Id  
See definition of output parameter ***neighborPortID*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. **och** – Optical Channel enable  
See definition of output parameter ***msrei*** in “RTRV-STM64: Retrieve STM64 port” (5-223).
18. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **pmode** – Port Mode  
See definition of output parameter ***pmode*** “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** “RTRV-STM16: Retrieve STM16 port” (5-209).

22. polynomial - Optical Channel Scrambling Polynomial  
See definition of output parameter ***polynomial*** “RTRV-STM64: Retrieve STM64 port” (5-223).
23. portClass – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. portControl – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. propagationDelay - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. rspm – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. nemspm – MS Near-End PM Enable  
See definition of output parameter ***nemspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** “RTRV-STM16: Retrieve STM16 port” (5-209).
30. rstimmon – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** “RTRV-STM16: Retrieve STM16 port” (5-209).
31. sdhpn – SDH ASAP  
See definition of output parameter ***sdhpn*** “RTRV-STM64: Retrieve STM64 port” (5-223).
32. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** “RTRV-STM16: Retrieve STM16 port” (5-209).
33. servcond – Service Condition  
See definition of output parameter ***servcond*** “RTRV-STM16: Retrieve STM16 port” (5-209).

34. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
35. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* “RTRV-STM16: Retrieve STM16 port” (5-209).
36. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* “RTRV-STM16: Retrieve STM16 port” (5-209).
37. *strcfmt* – Format of outgoing J0  
See definition of output parameter *strcfmt* “RTRV-STM16: Retrieve STM16 port” (5-209).
38. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
39. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* “RTRV-STM64: Retrieve STM64 port” (5-223).

#### Output format

If the ED-STM64 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behavior description

##### Behavior

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-STM64 notification for port (except for parameter *istd*; see below).

### **Switching of interface standard – Ignore other parameters**

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

### **Switching of interface standard – FM impact**

The change of the interface standard of a port from SDH to SONET has the following impact related to fault management:

- all SDH alarms related to that port are cleared
- the corresponding SONET alarms are raised.

### **Supply outgoing J0 trace value and format together**

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### **Supply outgoing J0 trace value according to format of outgoing J0**

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### **Switching of interface standard – Impact on port parameters**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – Side effects on tributaries**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – notification behavior**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – PM impact**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Disabling of PM monitor**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).



### Changing TCA mode from TR-RTR to TR-only

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Switching FEC

For OCh cards the FEC parameter is not considered: The FEC functionality is directly coupled to the activation/deactivation of the OCh layer for OP packs, which support the OCh frame format (LU proprietary solution). This means, that the fec parameter is not considered for the ED command. The FEC functionality is implicit switched on/off by switching on/off the OCh frame format by the och parameter.

The FEC automatically switched off: The FEC functionality is directly coupled to availability of a OCH or G.709 frame. This means, that the fec parameter is set to [Disable] if the OCH or G.709 frame is switched off by the och parameter.

### Example input/output

```
ED-STM64:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=644,
UNEQUIPOSIG=644;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ED-STM16:1-1-#-#-1-1::
    inputsig=644,unequiposig=644:"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-STM64 command.

### Validation rule: Enough bandwidth reserved for 2F protection group

Check of the tributary rate (*inputsig/unequiposig*) if the port is member of a 2f protection group. Then the assigned bandwidth will be max. half of the port's bandwidth.

Error code: IDNV - Input, Data Not Valid, Assigned bandwidth exceeds half port's bandwidth

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation Rule: TCA profile exists**

Check of the existence of the TCA profile.

Error code: IDNV - Input, Data Not Valid, TCA profile does not exist

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no protection for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when this port is in an protection group.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when portClass=INNI**

Check that the *servcond* is not OUTOFSERVICE when portClass=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc* out) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Validation rule: Change of FEC parameters only if supported by the current circuit pack**

When changing one of the FEC-related parameters *fec*, *feccor* and *fectype* it is checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code is used:

Error code: IDNV - Input, Data Not Valid, Parameter not supported

**Validation rule: Enabling of optical channel only if supported by the current circuit pack**

When enabling the optical channel via parameter *och* it will be checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code is used:

Error code: IDNV - Input, Data Not Valid, Parameter not supported

**Validation rule: Enabling of outband FEC only if optical channel is enabled**

When enabling outband FEC (*fectype* = *OUTBAND*, *fec* = *ENABLE*) it will be checked, whether the optical channel is enabled (*och* = *ENABLE*) as well.

Error code: SNVS - Status, Not in Valid State, Optical Channel must be enabled

**Check CCB against *ptype* and *istd***

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages**    “RTRV-STM64: Retrieve STM64 port” (5-223)

**References**    GR-199-CORE (ED-*rr*)



## ED-STM64 notification

---

**Output format** The ED-STM64 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STM64:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM64: Retrieve STM64 port” (5-223).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
Usage: The setting of this parameter is allowed when the related STM64 port is created, it is used when *sdfsmode*=BURST.
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
Usage: The setting of this parameter is allowed when the related STM64 port is created, it is used when *sdfsmode*=BURST.
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM64: Retrieve STM64 port” (5-223).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
Usage: The setting of this parameter is allowed when the related STM64 port is created, it is used when *sdfsmode*=POISSON.
6. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
Usage: The setting of this parameter is allowed when the related STM64 port is created, it is used when *sdfsmode*=POISSON.

7. **exprstrc** – Value of Expected J0  
See definition of output parameter **exprstrc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **fec** – FEC Enable  
See definition of output parameter **fec** in “RTRV-STM64: Retrieve STM64 port” (5-223).
9. **feccor** – FEC Correction Enable  
See definition of output parameter **feccor** in “RTRV-STM64: Retrieve STM64 port” (5-223).
10. **fectype** – FEC Type  
See definition of output parameter **fectype** in “RTRV-STM64: Retrieve STM64 port” (5-223).
11. **femspm** – Far-end Multiplex Section Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM64: Retrieve STM64 port” (5-223).
13. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM64: Retrieve STM64 port” (5-223).
15. **istd** – Interface Standard  
See definition of input parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
16. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. **msrei** – MS-REI Mode  
See definition of output parameter **msrei** in “RTRV-STM64: Retrieve STM64 port” (5-223).
18. **ndetmd** – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).

19. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. neighborNodeID – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. neighborPortID – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. nemspm – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. och – Optical Channel enable  
See definition of output parameter **msrei** in “RTRV-STM64: Retrieve STM64 port” (5-223).
24. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. pmode – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter **pmrsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. polynomial - Optical Channel Scrambling Polynomial  
See definition of output parameter **polynomial** “RTRV-STM64: Retrieve STM64 port” (5-223).
29. portClass – Port Class  
See definition of output parameter **portClass** in “RTRV-OC48: Retrieve OC48 port” (5-252).



30. portControl – Port Control  
See definition of output parameter **portControl** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. propagationDelay - Propagation Delay  
See definition of output parameter **propagationDelay** in “RTRV-OC48: Retrieve OC48 port” (5-252).
32. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. rspm – RS PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. rstimmon – RS TIM Monitor Enable  
See definition of output parameter **rstimmon** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. sdhpn – SDH ASAP  
See definition of output parameter **sdhpn** in “RTRV-STM64: Retrieve STM64 port” (5-223).
37. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. servcond – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).
39. srlgList – Shared Risk Link Group Identity List  
See definition of output parameter **srlgList** in “RTRV-OC48: Retrieve OC48 port” (5-252).
40. strcfmt – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
41. strcout – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 42. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 43. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 44. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 45. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM64: Retrieve STM64 port” (5-223).

**Example output**

```
ED-STM64:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=644,  
UNEQUIPOSIG=644;  
    UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;  
    UNITE-NE 00-11-28 08:00:30  
A 001 REPT DBCHG  
    "TIME=08-00-12,DATE=00-11-28:ED-STM16:1-1-#-#-1-1::  
    inputsig=644,unequiposig=644:"  
;
```



## ENT-STM64 notification

---

**Output format** The ENT-STM64 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-STM64:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM64: Retrieve STM64 port” (5-223).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM64: Retrieve STM64 port” (5-223).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fec* – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).

9. femspm – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM64: Retrieve STM64 port” (5-223).
11. fsflpbkstat – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *femspm* in “RTRV-STM64: Retrieve STM64 port” (5-223).
13. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
14. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. msrei – MS-REI Mode  
See definition of output parameter *msrei* in “RTRV-STM64: Retrieve STM64 port” (5-223).
16. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
19. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. nemspm – MS Near-End PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

21. och – Optical Channel enable  
See definition of output parameter *msrei* in “RTRV-STM64: Retrieve STM64 port” (5-223).
22. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. polynomial - Optical Channel Scrambling Polynomial  
See definition of output parameter *polynomial* in “RTRV-STM64: Retrieve STM64 port” (5-223).
27. portClass – Port Class  
See definition of output parameter *portClass* in “RTRV-OC48: Retrieve OC48 port” (5-252).
28. portControl – Port Control  
See definition of output parameter *portControl* in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. propagationDelay - Propagation Delay  
See definition of output parameter *propagationDelay* in “RTRV-OC48: Retrieve OC48 port” (5-252).
30. rsmstca – RS/MS TCA Profile Pointer  
See definition of output parameter *rsmstca* in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. rspm – RS PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 32. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 33. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 34. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM64: Retrieve STM64 port” (5-223).
- 35. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 38. **strcfmt** – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 39. **strcout** – Value of outgoing J0  
See definition of output parameter ***strcout*** “RTRV-STM16: Retrieve STM16 port” (5-209).
- 40. **strcwfmt** – Format of outgoing J0  
See definition of output parameter ***strcwfmt*** “RTRV-STM16: Retrieve STM16 port” (5-209).
- 41. **tcamd** – TCA mode  
See definition of output parameter ***tcamd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 42. **trbmd** – Tributary Mode  
See definition of output parameter ***trbmd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 43. **unequiposig** – Unequipped Output Signal List  
See definition of output parameter ***unequiposig*** in “RTRV-STM64: Retrieve STM64 port” (5-223).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-STM64:1-1-#-#-1-1::
servcond=DISABLE,och=DISABLE,inputsig=644,...,
unequiposig=644,fec=DISABLE,feccor=DISABLE,
fectype=INBAND"
;
```



## DLT-STM64 notification

---

**Output format**     The DLT-STM64 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-STM64:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM64: Retrieve STM64 port” (5-223).

**Example output**     UNITE-NE 00-11-20 8:01:03  
A 611 REPT DBCHG  
"Time=8-00-30,DATE=00-11-20:DLT-STM64:1-1-#-#-4-1"  
;





## ED-STM64 autonomous notifications

---

**LOS for transmission port  
STM64 clears**

If LOS is cleared and current port mode is AUTO, then *portmode* is updated (new value: MON). This update is reported via ED-STM64 notification with parameter pmode.

**Change of neighbor node  
and neighbor port  
information**

If *ndetmd*=AUTO a change of the attributes *neighborNodeID*, *neighborPortID* or *neighborASTNNodeID* is notified by the related ED-STM64 notification.



## ED-STM256: Edit STM256 port

---

The ED-STM256 command is used to provision all parameters related to optical STM256 port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**      Command Syntax: ED-STM256:*tid:aid:ctag::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-STM256: Retrieve STM256 port” (5-232).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       Usage: The setting of this parameter is allowed when the related STM256 port is created, it is used when *sd fsmode*=BURST.
2.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       Usage: The setting of this parameter is allowed when the related STM256 port is created, it is used when *sd fsmode*=BURST.
3.    *degthr* – Signal Degrade Threshold  
       See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
       Usage: The setting of this parameter is allowed when the related STM256 port is created, it is used when *sd fsmode*=POISSON.

4. **dexcthr** – Excessive Degrade Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).  
Usage: The setting of this parameter is allowed when the related STM64 port is created, it is used when **sd fsmode**=POISSON.
5. **exprstrc** – Value of Expected J0  
See definition of output parameter **exprstrc** in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. **fec** – FEC Enable  
See definition of output parameter **fec** in “RTRV-STM64: Retrieve STM64 port” (5-223).
7. **femspm** – Far-end Multiplex Section Enable  
See definition of output parameter **femspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM256: Retrieve STM256 port” (5-232).
10. **istd** – Interface Standard  
See definition of input parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
11. **nemspm** – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. **och** – optical channel enable  
See definition of output parameter **och** in “RTRV-STM64: Retrieve STM64 port” (5-223).
13. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).

15. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
16. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM256: Retrieve STM256 port” (5-232).
22. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **strcfmt** – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **strcout** – Value of outgoing J0  
See definition of output parameter ***strcout*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

27. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. *tcamd* – TCA mode  
See definition of output parameter *tcamd* in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-STM256: Retrieve STM256 port” (5-232).

**Output format**

If the ED-STM256 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-STM256 notification for port (except for parameter *istd*; see below).

**Switching of interface standard – Ignore other parameters**

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

**Switching of interface standard – FM impact**

The change of the interface standard of a port from SDH to SONET has the following impact related to Fault Management:

- all SDH alarms related to that port are cleared
- the corresponding SONET alarms are raised.

### **Supply outgoing J0 trace value and format together**

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### **Supply outgoing J0 trace value according to format of outgoing J0**

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### **Switching of interface standard – Impact on port parameters**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – Side effects on tributaries**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – notification behavior**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching of interface standard – PM impact**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Disabling of PM monitor**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Changing TCA mode from TR-RTR to TR-only**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Switching FEC**

See detailed behavior specification in “ED-STM64: Edit STM64 port” (5-357).

### **Example input/output**

```
ED-STM256:UNITE-NE:1-1-#-#-us01-1:123456:::INPUTSIG=644,  
UNEQUIPOSIG=644;  
    UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;
```

## ED-STM256: Edit STM256 port

```

        UNITE-NE 00-11-28 08:00:30
A   001 REPT DBCHG
        "TIME=08-00-12,DATE=00-11-28:ED-STM256:1-1-#-#-1-1::
inputsig=644,unequiposig=644:"
;

```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the “ED-STM256: Edit STM256 port” (5-380) command.

**Validation rule: Enough bandwidth reserved for 2F protection group**

Check of the tributary rate (*inputsig/unequiposig*) if the port is member of a 2f protection group. Then the assigned bandwidth is max. half of the port’s bandwidth.

Error code: IDNV - Input, Data Not Valid, Assigned bandwidth exceeds half port’s bandwidth

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation Rule: TCA profile exists**

Check of the existence of the TCA profile.

Error code: IDNV - Input, Data Not Valid, TCA profile does not exist

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no protection for *istd* change**

Check that the interface standard parameter (*istd*) is not changed when this port is in an protection group.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when portClass=INNI**

Check that the *servcond* is not OUTOFSERVICE when *portClass*=INNI.

Error Code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports



**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc* out) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Validation rule: Change of FEC parameters only if supported by the current circuit pack**

When changing one of the FEC-related parameters *fec*, *feccor* and *fectype* it will be checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code is used:

Error code: IDNV - Input, Data Not Valid, Parameter not supported

**Validation rule: Enabling of optical channel only if supported by the current circuit pack**

When enabling the optical channel via parameter *och* it will be checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code is used:

Error code: IDNV - Input, Data Not Valid, Parameter not supported

**Check CCB against *ptype* and *istd***

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages** “RTRV-STM256: Retrieve STM256 port” (5-232)

**References** GR-199-CORE (ED-*rr*)



## ED-STM256 notification

---

**Output format** The ED-STM256 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STM256:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM256: Retrieve STM256 port” (5-232).

#### Spec block parameters

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM256 port is created, it is used when *sdfsmode*=BURST.
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM256 port is created, it is used when *sdfsmode*=BURST.
3. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM64: Retrieve STM64 port” (5-223).
4. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM256 port is created, it is used when *sdfsmode*=POISSON.
5. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).  
The setting of this parameter is allowed when the related STM64 port is created, it is used when *sdfsmode*=POISSON.
6. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).

7. fec – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
8. femspm – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
9. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. fsflpbkstat – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-STM256: Retrieve STM256 port” (5-232).
12. istd – Interface Standard  
See definition of input parameter *istd* “ED-STM16: Edit STM16 port” (5-334).
13. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. nemspm – MS Near-End PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. och – optical channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).
16. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

19. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **rspm** – RS PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **sdhpn** – SDH ASAP  
See definition of output parameter ***sdhpn*** in “RTRV-STM256: Retrieve STM256 port” (5-232).
25. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **strcfmt** – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **strcout** – Value of outgoing J0  
See definition of output parameter ***strcout*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **strcwfmt** – Format of outgoing J0  
See definition of output parameter ***strcwfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **tcamd** – TCA mode  
See definition of output parameter ***tcamd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

31. **trbmd** – Tributary mode  
See definition of output parameter ***trbmd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **unequiposig** – Unequipped Output Signal List  
See definition of output parameter ***unequiposig*** in “RTRV-STM256: Retrieve STM256 port” (5-232).

**Example output**

```
ED-STM256:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=644,  
UNEQUIPOSIG=644;  
    UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;  
    UNITE-NE 00-11-28 08:00:30  
A 001 REPT DBCHG  
    "TIME=08-00-12,DATE=00-11-28:ED-STM256:1-1-#-#-1-1::  
    inputsig=644,unequiposig=644:"  
;
```



## ENT-STM256 notification

---

**Output format** The ENT-STM256 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-STM256:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM256: Retrieve STM256 port” (5-232).

#### Spec block Parameter

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-STM64: Retrieve STM64 port” (5-223).
4. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *fec* – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
8. *femspm* – Far-end Multiplex Section Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. **frcdus** – Force to DUS  
See definition of output parameter **frcdus** in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. **fsflpbkstat** – Far Side Facility Loopback Status  
See definition of output parameter **fsflpbkstat** in “RTRV-STM16: Retrieve STM16 port” (5-209).
11. **inputsig** – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-STM256: Retrieve STM256 port” (5-232).
12. **istd** – Interface Standard  
See definition of input parameter **istd** “ED-STM16: Edit STM16 port” (5-334).
13. **lpbk** – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. **nemspm** – MS Near-End PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. **och** – optical channel enable  
See definition of output parameter **och** in “RTRV-STM64: Retrieve STM64 port” (5-223).
16. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **pmode** – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter **pmrsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).



20. **rsmstca** – RS/MS TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **rspm** – RS PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter **rstimca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter **rstimmon** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **sdhpn** – SDH ASAP  
See definition of output parameter **sdhpn** in “RTRV-STM256: Retrieve STM256 port” (5-232).
25. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **servcond** – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **strcfmt** – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **strcout** – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **strcwfmt** – Format of outgoing J0  
See definition of output parameter **strcwfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **tcamd** – TCA mode  
See definition of output parameter **tcamd** in “RTRV-STM16: Retrieve STM16 port” (5-209).

31. **trbmd** – Tributary mode  
See definition of output parameter ***trbmd*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **unequiposig** – Unequipped Output Signal List  
See definition of output parameter ***unequiposig*** in “RTRV-STM256: Retrieve STM256 port” (5-232).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-STM256:1-1-#-#-4-1::
servcond=DISABLE,och=DISABLE,inputsig=2564,...,
unequiposig=2564,fec=DISABLE,feccor=DISABLE,
fectype=INBAND"
;
```



## DLT-STM256 notification

---

**Output format** The DLT-STM256 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: DLT-STM256:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STM256: Retrieve STM256 port” (5-232).

### Example output

```
UNITE-NE 00-11-20 8:01:03
A 611 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-STM256:1-1-#-#-4-1
;
```



## ED-STM256 autonomous notifications

---

### **LOS for transmission port STM256 clears**

If LOS is cleared and current port mode is AUTO, then ***pmode*** is updated (new value: MON). This update is reported via ED-STM256 notification with parameter ***pmode***.



## ED-OC3: Edit OC3 port

---

The ED-OC3 command is used to provision all parameters related to optical OC3 port.

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                   Priority: 1  
                   Abortable: no

**Input format**    Command Syntax: ED-OC3:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-OC3: Retrieve OC3 port” (5-238).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4.    *exprstrc* – Value of Expected J0  
       See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).

5. felpm – Far-end Line PM Enable  
See definition of output parameter *felpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC3: Retrieve OC3 port” (5-238).
8. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
9. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
10. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
11. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. nelpm – Near-End Line PM Enable  
See definition of output parameter *nelpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
15. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
16. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

17. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
18. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
19. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC12: Retrieve OC12 port” (5-245).

- 29. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 30. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 31. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 32. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 33. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 34. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 35. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC3: Retrieve OC3 port” (5-238).
- 36. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Output format** If the ED-OC3 command completes successfully, then the following normal completion response is returned:

```
sid date time
M  ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.



The modification is reported by means of an ED-OC3 notification for port (except for parameter *istd*; see below).

#### **Switching of interface standard – Ignore other parameters**

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

#### **Switching of interface standard – FM impact**

The change of the interface standard of a port from SONET to SDH has the following impact related to Fault Management:

- all SONET alarms related to that port are cleared
- the corresponding SDH alarms are raised.

#### **Switching of tributary mode**

When changing the parameter *trbmd* – tributary mode from FIXED to ADAPTIVE the parameter *crstat* may change its value, too, depending on the current input signal structure. This change is notified using the related ED-OC3 notification.

When changing the parameter *trbmd* – tributary mode from ADAPTIVE to FIXED the parameter *crstat* may change its value, too, depending on the current setting of parameter *inputsig*. This change is notified using the related ED-OC3 notification.

#### **Supply outgoing J0 trace value and format together**

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

#### **Supply outgoing J0 trace value according to format of outgoing J0**

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

#### **Switching of interface standard – Impact on port parameters**

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – Side effects on tributaries

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – notification behavior

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – PM impact

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Disabling of PM monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-OC3:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=31,
UNEQUIPOSIG=31;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-28:ED-OC3:1-1-#-#-1-1::
    inputsig=31,unequiposig=31:"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-OC3 command.

### Validation rule: ASAP profile exists

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

### Validation rule: TCA profile exists

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334)

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no test access session for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when a tributary related to this port is used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, a test access session exists

**Validation rule: no protection for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when this port is in an protection group.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: no path protection for *trbmd* change to ADAPTIVE**

Check that *trbmd* is not set to ADAPTIVE when this port is in a path protection group.

Error code: SNVS - Status, Not in Valid State, a path protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when portClass=INNI**

Check that the *servcond* is not OUTOFSERVICE when portClass=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc* out) is supplied, too, if the format of the outgoing J0 trace (*strcwfnt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfnt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Check CCB against *pctype* and *istd***

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages**      “RTRV-OC3: Retrieve OC3 port” (5-238)

**References**      GR-199-CORE (ED-*rr*)



## ED-OC3 notification

---

**Output format** The ED-OC3 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-OC3:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC3: Retrieve OC3 port” (5-238).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC3: Retrieve OC3 port” (5-238).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC3: Retrieve OC3 port” (5-238).
10. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
19. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
21. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC12: Retrieve OC12 port” (5-245).



32. **spm** – Section PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter ***srlgList*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
34. **strcfmt** – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. **strcout** – Value of outgoing J0  
See definition of output parameter ***strcout*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. **strcfwmt** – Format of outgoing J0  
See definition of output parameter ***strcfwmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. **trbmd** – Tributary mode  
See definition of output parameter ***trbmd*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. **unequiposig** – Unequipped Output Signal List  
See definition of output parameter ***unequiposig*** in “RTRV-OC3: Retrieve OC3 port” (5-238).
39. **z0outmode** – Mode of outgoing Z0 byte insertion  
See definition of output parameter ***z0outmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Example output**

```
ED-OC3:UNITE-NE:1-1-#-#-u1-1:123456:::INPUTSIG=31,
UNEQUIPOSIG=31;
  UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
  UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ED-OC3:1-1-#-#-1-1::
inputsig=31,unequiposig=31:"
;
```

□

## ENT-OC3 notification

---

**Output format** The ENT-OC3 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-OC3:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC3: Retrieve OC3 port” (5-238).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC3: Retrieve OC3 port” (5-238).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC3: Retrieve OC3 port” (5-238).
10. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM1: Retrieve STM1 port” (5-194).
19. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM1: Retrieve STM1 port” (5-194).
21. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC12: Retrieve OC12 port” (5-245).

32. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
34. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. *strcfwmt* – Format of outgoing J0  
See definition of output parameter *strcfwmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC3: Retrieve OC3 port” (5-238).
39. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-OC3:1-1-#-#-1-
1::servcond=ENABLE, sdsfmode=POISSON,sdthr=-
6,brstthr=30,....,istd=SONET,inputsig=31,unequiposig=31"
;
```

□

## DLT-OC3 notification

---

**Output format**     The DLT-OC3 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-OC3:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC3: Retrieve OC3 port” (5-238).

**Example output**     UNITE-NE 00-11-20 8:01:03  
A 611 REPT DBCHG  
"Time=8-00-30,DATE=00-11-20:DLT-OC3:1-1-#-#-4-1  
;



## ED-OC3 autonomous notifications

---

**LOS for transmission port  
OC3 clears**

If LOS is cleared and current port mode is AUTO, then portmode is updated (new value: MON). This update is reported via ED-OC3 notification with parameter *pmode*.

**Change of the constituent  
rates status list**

If *trbmd*=ADAPTIVE a change of the attribute *crstat* is notified by the related ED-OC3 notification.



## ED-OC12: Edit OC12 port

---

The ED-OC12 command is used to provision all parameters related to optical OC12 port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**      Command Syntax: ED-OC12:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-OC12: Retrieve OC12 port” (5-245).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4.    *exprstrc* – Value of Expected J0  
       See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).



5. felpm – Far-end Line PM Enable  
See definition of output parameter *felpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC12: Retrieve OC12 port” (5-245).
8. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
9. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
10. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
11. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. nelpm – Near-End Line PM Enable  
See definition of output parameter *nelpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM4: Retrieve STM4 port” (5-201).
15. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM4: Retrieve STM4 port” (5-201).
16. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

17. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
18. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
19. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC12: Retrieve OC12 port” (5-245).

29. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *strcfwmt* – Format of outgoing J0  
See definition of output parameter *strcfwmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
35. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC12: Retrieve OC12 port” (5-245).
36. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Output format** If the ED-OC12 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-OC12 notification for port (except for parameter *istd*; see below).

### Switching of interface standard – Ignore other parameters

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

### Switching of interface standard – FM impact

The change of the interface standard of a port from SONET to SDH has the following impact related to Fault Management:

- all SONET alarms related to that port are cleared
- the corresponding SDH alarms are raised.

### Switching of tributary mode

When changing the parameter *trbmd* – tributary mode from FIXED to ADAPTIVE the parameter *crstat* may change its value, too, depending on the current input signal structure. This change is notified using the related ED-OC12 notification.

When changing the parameter *trbmd* – tributary mode from ADAPTIVE to FIXED the parameter *crstat* may change its value, too, depending on the current setting of parameter *inputsig*. This change is notified using the related ED-OC12 notification.

### Supply outgoing J0 trace value and format together

When changing the format of the outgoing J0 trace *strcwfnt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### Supply outgoing J0 trace value according to format of outgoing J0

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfnt* for the outgoing J0 trace.

### Switching of interface standard – Impact on port parameters

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – Side effects on tributaries

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – notification behavior

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – PM impact

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Disabling of PM monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-OC12:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=31-
33,UNEQUIPOSIG=31-33;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-28:ED-OC12:1-1-#-#-1-
1::inputsig=31-33,unequiposig=31-33:"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-OC3 command.

### Validation rule: ASAP profile exists

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

### Validation rule: TCA profile exists

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no test access session for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when a tributary related to this port is used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, a test access session exists

**Validation rule: no protection for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when this port is in an protection group

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: no path protection for *trbmd* change to ADAPTIVE**

Check that *trbmd* is not set to ADAPTIVE when this port is in a path protection group.

Error code: SNVS - Status, Not in Valid State, a path protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when *portClass*=INNI**

Check that the *servcond* is not OUTOFSERVICE when *portClass*=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopbackp is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc* out) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Check CCB against *ptype* and *istd***

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Related TL1 messages**      “RTRV-OC12: Retrieve OC12 port” (5-245)

**References**      GR-199-CORE (ED-*rr*)





## ED-OC12 notification

---

**Output format** The ED-OC12 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-OC12:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC12: Retrieve OC12 port” (5-245).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC12: Retrieve OC12 port” (5-245).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *felpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-OC12: Retrieve OC12 port” (5-245).
10. istd – Interface Standard  
See definition of input parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. ndetmd – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborNodeID – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborPortID – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. nelpm – Near-End Line PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM4: Retrieve STM4 port” (5-201).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM4: Retrieve STM4 port” (5-201).
19. pmode – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
21. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC12: Retrieve OC12 port” (5-245).

- 32. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 33. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 34. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 38. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC12: Retrieve OC12 port” (5-245).
- 39. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Example output**

```
ED-OC12:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=31-33,UNEQUIPOSIG=31-33;  
UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;  
UNITE-NE 00-11-28 08:00:30  
A 001 REPT DBCHG  
"TIME=08-00-12,DATE=00-11-28:ED-OC12:1-1-#-#-1-1::inputsig=31-33,unequiposig=31-33:"  
;
```



## ENT-OC12 notification

---

**Output format** The ENT-OC12 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-OC12:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC12: Retrieve OC12 port” (5-245).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC12: Retrieve OC12 port” (5-245).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-OC12: Retrieve OC12 port” (5-245).
10. istd – Interface Standard  
See definition of input parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. ndetmd – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborNodeID – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborPortID – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. nelpm – Near-End Line PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM4: Retrieve STM4 port” (5-201).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM4: Retrieve STM4 port” (5-201).
19. pmode – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM4: Retrieve STM4 port” (5-201).
21. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC12: Retrieve OC12 port” (5-245).

- 32. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 33. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 34. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 38. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC12: Retrieve OC12 port” (5-245).
- 39. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-OC12:1-1-#-#-1-1::
servcond=ENABLE, sdsfmode=POISSON,sdthr=-6,
brstthr=30,....,istd=SONET,inputsig=121,
unequiposig=121"
;
```





## DLT-OC12 notification

---

**Output format** The DLT-OC12 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-OC12:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC12: Retrieve OC12 port” (5-245).

**Example output**

```
UNITE-NE 00-11-20 8:01:03
A 611 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-OC12:1-1-#-#-4-1
;
```



## ED-OC12 autonomous notifications

---

|                                                                      |                                                                                                                                                                               |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LOS for transmission port<br/>OC12 clears</b>                     | If LOS is cleared and current port mode is AUTO, then portmode is updated (new value: MON). This update is reported via ED-OC12 notification with parameter pmode.            |
| <b>Change of the constituent<br/>rates status list</b>               | If <i>trbmd</i> =ADAPTIVE a change of the attribute <i>crstat</i> is notified by the related ED-OC12 notification.                                                            |
| <b>Change of neighbor node<br/>and neighbor port<br/>information</b> | If <i>ndetmd</i> =AUTO a change of the attributes <i>neighborNodeID</i> , <i>neighborPortID</i> or <i>neighborASTNNodeID</i> is notified by the related ED-OC12 notification. |



## ED-OC48: Edit OC48 port

---

The ED-OC48 command is used to provision all parameters related to optical OC48 port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
 Priority: 1  
 Abortable: no

**Input format** Command Syntax: ED-OC48:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *aid* – Access Identifier  
 See definition of output parameter *aid* in “RTRV-OC48: Retrieve OC48 port” (5-252).
3. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. *adminCost* - Administrative Cost  
 See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
 See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
 See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *exprstrc* – Value of Expected J0  
 See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).

5. felpm – Far-end Line PM Enable  
See definition of output parameter *felpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC48: Retrieve OC48 port” (5-252).
8. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
9. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
10. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
11. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. nelpm – Near-End Line PM Enable  
See definition of output parameter *nelpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
16. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

17. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
19. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
20. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC48: Retrieve OC48 port” (5-252).

- 29. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 30. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 31. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 32. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 33. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 34. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 35. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 36. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Output format** If the ED-OC48 command completes successfully, then the following normal completion response is returned:

```
sid date time
M  ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-OC48 notification for port (except for parameter *istd*; see below).

### **Switching of interface standard – Ignore other parameters**

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

### **Switching of interface standard – FM impact**

The change of the interface standard of a port from SONET to SDH has the following impact related to Fault Management:

- all SONET alarms related to that port are cleared
- the corresponding SDH alarms are raised.

### **Switching of tributary mode**

When changing the parameter *trbmd* – tributary mode from FIXED to ADAPTIVE the parameter *crstat* may change its value, too, depending on the current input signal structure. This change is notified using the related ED-OC48 notification.

When changing the parameter *trbmd* – tributary mode from ADAPTIVE to FIXED the parameter *crstat* may change its value, too, depending on the current setting of parameter *inputsig*. This change is notified using the related ED-OC48 notification.

### **Supply outgoing J0 trace value and format together**

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### **Supply outgoing J0 trace value according to format of outgoing J0**

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### **Switching of interface standard – Impact on port parameters**

The switching of *istd* should not result in a deletion and recreation of the port. NE internally there are no differences between SDH and SONET.

### **Switching of interface standard I:**

In detail the following attributes are influenced by switching of the *istd* from SONET to SDH (see also the related RTRV-STMN command for SDH parameter description):

- *brstintvl* is set to the default value
- *brstthr* is set to the default value
- *crstat* may change according to its semantics (see description of *crstat*)
- *degthr* is set to the default value for an SDH port
- *dexcthr* is set to the default value for an SDH port
- *felpm* is mapped to *femspm* (no changes)
- *inputsig* is set to the default value
- *istd* is set to SDH
- *nelpm* is mapped to *nemspm* (no changes)
- *rstimca* is set to the default value for a SDH port
- *rstimmon* is set to the default value for a SDH port
- *sdsfmode* is set to the default value for an SDH port
- *spm* is mapped to *rspm* (no changes)
- *sonet* is mapped to *sdhpn* (no changes)
- *trbmd* is set to the default value for an SDH port
- *unequiposig* is set to its default value.

All other port parameters remain unchanged.

#### Switching of interface standard II:

#### Switching of interface standard III:

#### Switching of interface standard – Side effects on tributaries

The switching of *istd* should not result in an deletion and recreation of the tributaries of a port. NE internally there are no differences between SDH and SONET.

In detail the following side-effects apply to the related tributary attributes when switching the *istd* from SONET to SDH (see also the related RTRV-STMN command for SDH parameter description):

- *brstintvl* is set to the default value for a SDH tributary
- *brstthr* is set to the default value for a SDH tributary



- *pse* (PDI-P parameter) shall be set to the default value for a SDH tributary
- *sdsfmode* is set to the default value for a SDH tributary.

All other tributary parameters remain unchanged.

#### **Switching of interface standard – Side effects on tributaries II**

In addition to the list of attributes above the following side-effects apply to the related tributary attributes when switching the *istd* from SONET to SDH (see also the related RTRV-STMn command for SDH parameter description):

- *degthr* is set to the default value for an SDH tributary
- *dexcthr* is set to the default value for an SDH tributary
- *ptca* shall be set to the default value for a SDH tributary
- *tcamd* is set to the default value for a SDH tributary.

#### **Switching of interface standard – Side effects on tributaries III**

In addition to the list of attributes above the following side-effects apply to the related tributary attributes when switching the *istd* from SONET to SDH (see also the related RTRV-STMn command for SDH parameter description):

- *pmhpneses* is set to the default value for an SDH tributary
- *pmhpfeses* is set to the default value for an SDH tributary.

#### **Switching of interface standard – notification behavior for port attributes**

When changing the interface standard *istd* using the ED-OCn command all resulting parameter changes are reported by ED-STMn notifications of the related port rate. This is valid for the parameter *istd* itself as well as for all other parameters which might change as a consequence of changing the interface standard.

#### **Switching of interface standard – notification behavior for tributary attributes**

When changing the interface standard *istd* using the ED-OCn command all resulting tributary parameter changes are reported by ED-VC3 notifications.

For efficiency reasons the ED-VC3 notifications is sent out as a single notification using a range over the aid which depends on the port rate

of the associated port, i. e. the Simple\_STS1NumAID field in the STS1NumAID is set to

- 1 - 3 in case of an STS1/OC3 port
- 1 - 12 in case of an STS4/OC12 port
- 1 - 48 in case of an STS16/OC48 port
- 1 - 192 in case of an STS64/OC192 port
- 1 - 768 in case of an STS256/OC768 port.

### Switching of interface standard – PM impact

See Detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334) .

### Disabling of PM monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-OC48:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;
  UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
  UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
  "TIME=08-00-12,DATE=00-11-28:ED-OC48:1-1-#-#-1-1::inputsig=74-33-84,unequiposig=74-33-84:"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-OC48 command.

### Validation rule: Enough bandwidth reserved for 2F protection group

Check of the tributary rate (*inputsig/unequiposig*) if the port is member of a 2f protection group. Then the assigned bandwidth is max. half of the port's bandwidth.

Error code: IDNV - Input, Data Not Valid, Assigned bandwidth exceeds half port's bandwidth

### Validation rule: ASAP profile exists

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no test access session for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when a tributary related to this port is used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, a test access session exists

**Validation rule: no protection for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when this port is in an protection group.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: no path protection for *trbmd* change to ADAPTIVE**

Check that *trbmd* is not set to ADAPTIVE when this port is in a path protection group.

Error code: SNVS - Status, Not in Valid State, a path protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when portClass=INNI**

Check that the *servcond* is not OUTOFSERVICE when portClass=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable servcond for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

**Error code:** SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

**Example:** The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc out*) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

**Error code:** IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

**Error code:** IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Related TL1 messages**

“RTRV-OC48: Retrieve OC48 port” (5-252)

**References**

GR-199-CORE (ED-*rr*)



## ED-OC48 notification

---

**Output format** The ED-OC48 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-OC48:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC48: Retrieve OC48 port” (5-252).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC48: Retrieve OC48 port” (5-252).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter **inputsig** in “RTRV-OC48: Retrieve OC48 port” (5-252).
10. istd – Interface Standard  
See definition of input parameter **istd** in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter **lpbk** in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. ndetmd – Neighbor Detection Mode  
See definition of output parameter **ndetmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter **neighborASTNNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborNodeID – Neighbor Node Id  
See definition of output parameter **neighborNodeID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborPortID – Neighbor Port Id  
See definition of output parameter **neighborPortID** in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. nelpm – Near-End Line PM Enable  
See definition of output parameter **nemspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter **pmmsfeses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter **pmmsneses** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. pmode – Port Mode  
See definition of output parameter **pmode** in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC48: Retrieve OC48 port” (5-252).



- 32. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 33. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 34. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 36. *strcfwmt* – Format of outgoing J0  
See definition of output parameter *strcfwmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 38. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 39. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Example output**

```
ED-OC48:UNITE-NE:1-1-#-#-u1-1:123456:::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;  
UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;  
UNITE-NE 00-11-28 08:00:30  
A 001 REPT DBCHG  
"TIME=08-00-12,DATE=00-11-28:ED-OC48:1-1-#-#-1-1::inputsig=74-33-84,unequiposig=74-33-84:"  
;
```



## ENT-OC48 notification

---

**Output format** The ENT-OC48 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-OC48:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC48: Retrieve OC48 port” (5-252).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC48: Retrieve OC48 port” (5-252).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC48: Retrieve OC48 port” (5-252).
10. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
22. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC48: Retrieve OC48 port” (5-252).

32. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
33. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
34. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
35. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. *strcfwmt* – Format of outgoing J0  
See definition of output parameter *strcfwmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
38. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC48: Retrieve OC48 port” (5-252).
39. *z0outmode* – Mode of outgoing Z0 byte insertion  
See definition of output parameter *z0outmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-OC48:
1-1-#-#-1-1::servcond=ENABLE, sdsfmode=POISSON,
sdthr=-6,brstthr=30,....,istd=SONET,
inputsig=481,unequiposig=481"
;
```



## DLT-OC48 notification

---

**Output format**    The DLT-OC48 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-OC48:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC48: Retrieve OC48 port” (5-252).

**Example output**    UNITE-NE 00-11-20 8:01:03  
A 611 REPT DBCHG  
"Time=8-00-30,DATE=00-11-20:DLT-OC48:1-1-#-#-4-1  
;



## ED-OC48 autonomous notifications

---

|                                                                      |                                                                                                                                                                               |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LOS for transmission port<br/>OC48 clears</b>                     | If LOS is cleared and current port mode is AUTO, then portmode is updated (new value: MON). This update is reported via ED-OC48 notification with parameter <i>pmode</i> .    |
| <b>Change of the constituent<br/>rates status list</b>               | If <i>trbmd</i> =ADAPTIVE a change of the attribute <i>crstat</i> is notified by the related ED-OC48 notification.                                                            |
| <b>Change of neighbor node<br/>and neighbor port<br/>information</b> | If <i>ndetmd</i> =AUTO a change of the attributes <i>neighborNodeID</i> , <i>neighborPortID</i> or <i>neighborASTNNodeID</i> is notified by the related ED-OC48 notification. |



## ED-OC192: Edit OC192 port

---

The ED-OC192 command is used to provision all parameters related to an optical OC192 port.

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                   Priority: 1  
                   Abortable: no

**Input format**    Command Syntax: ED-OC192:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-OC192: Retrieve OC192 port” (5-261).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *adminCost* - Administrative Cost  
       See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4.    *exprstrc* – Value of Expected J0  
       See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).



5. fec – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
6. felpm – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. frcdus – Force to DUS  
See definition of output parameter *frdus* in “RTRV-STM64: Retrieve STM64 port” (5-223).
8. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC192: Retrieve OC192 port” (5-261).
9. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
10. msrei – MS-REI mode  
See definition of output parameter *msrei* in “RTRV-STM64: Retrieve STM64 port” (5-223).
11. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
12. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
13. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
14. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
16. och – Optical Channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).

17. **pmmsfeses** – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter ***pmmsfeses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **polynomial** - Optical Channel Scrambling Polynomial  
See definition of output parameter ***polynomial*** in “RTRV-STM64: Retrieve STM64 port” (5-223).
22. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
23. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
24. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
25. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).

28. **sdthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **servcond** – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sfthr** – Signal Failure Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
31. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **sonet** – SONET ASAP  
See definition of output parameter **sonet** in “RTRV-OC192: Retrieve OC192 port” (5-261).
33. **spm** – Section PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
34. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter **srlgList** in “RTRV-OC48: Retrieve OC48 port” (5-252).
35. **strcfmt** – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
36. **strcout** – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).
37. **strcfmt** – Format of outgoing J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
38. **trbmd** – Tributary mode  
See definition of output parameter **trbmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
39. **unequiposig** – Unequipped Output Signal List  
See definition of output parameter **unequiposig** in “RTRV-OC192: Retrieve OC192 port” (5-261).

**Output format** If the ED-OC192 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-OC192 notification for port (except for parameter *istd*; see below).

**Switching of interface standard – Ignore other parameters**

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

**Switching of interface standard – FM impact**

The change of the interface standard of a port from SONET to SDH has the following impact related to Fault Management:

- all SONET alarms related to that port are cleared
- the corresponding SDH alarms are raised.

**Switching of tributary mode**

When changing the parameter *trbmd* – tributary mode from FIXED to ADAPTIVE the parameter *crstat* may change its value, too, depending on the current input signal structure. This change is notified using the related ED-OC192 notification.

When changing the parameter *trbmd* – tributary mode from ADAPTIVE to FIXED the parameter *crstat* may change its value, too, depending on the current setting of parameter *inputsig*. This change is notified using the related ED-OC192 notification.

### Supply outgoing J0 trace value and format together

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### Supply outgoing J0 trace value according to format of outgoing J0

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### Switching of interface standard – Impact on port parameters

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – Side effects on tributaries

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Switching of interface standard – notification behavior

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### Disabling of PM monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-OC192:UNITE-NE:1-1-#-#-1-1:123456::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
    "TIME=08-00-12,DATE=00-11-28:ED-OC192:1-1-#-#-1-1::inputsig=74-33-84,unequiposig=74-33-84:"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-OC192 command.

**Validation rule: Enough bandwidth reserved for 2F protection group**

Check of the tributary rate (*inputsig/unequiposig*) if the port is member of a 2f protection group. Then the assigned bandwidth is max. half of the port's bandwidth.

Error code: IDNV - Input, Data Not Valid, Assigned bandwidth exceeds half port's bandwidth

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

See definition of validation rule in "ED-STM16: Edit STM16 port" (5-334).

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State, cross-connections are still existing

**Validation rule: no loopbacks for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no test access session for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when a tributary related to this port is used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, a test access session exists

**Validation rule: no protection for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when this port is in an protection group

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: no path protection for *trbmd* change to ADAPTIVE**

Check that *trbmd* is not set to ADAPTIVE when this port is in a path protection group.

Error code: SNVS - Status, Not in Valid State, a path protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when *portClass*=INNI**

Check that the *servcond* is not OUTOFSERVICE when *portClass*=INNI.

Error code: SNVS - Status, Not in Valid State, can not disable *servcond* for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc* out) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Validation rule: Change of FEC parameters only if supported by the current circuit pack**

When changing one of the FEC-related parameters *fec*, *feccor* and *fectype* it will be checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code is used:



Error code: IDNV - Input, Data Not Valid, Parameter not supported

**Validation rule: Enabling of optical channel only if supported by the current circuit pack**

When enabling the optical channel via parameter *och* it will be checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code is used:

Error code: IDNV - Input, Data Not Valid, Parameter not supported

**Validation rule: Enabling of outband FEC only if optical channel is enabled**

When enabling outband FEC (*fectype* = *OUTBAND*, *fec* = *ENABLE*) it will be checked, whether the optical channel is enabled (*och* = *ENABLE*) as well.

Error code: SNVS - Status, Not in Valid State, Optical Channel must be enabled

**Check CCB against *ptype* and *istd***

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Switching FEC**

See description in “ED-STM64: Edit STM64 port” (5-357) Detailed behavior section.

**Related TL1 messages**    “RTRV-OC192: Retrieve OC192 port” (5-261)

**References**    GR-199-CORE (ED-*rr*)



## ED-OC192 notification

---

**Output format** The ED-OC192 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-OC192:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC192: Retrieve OC192 port” (5-261).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC192: Retrieve OC192 port” (5-261).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *fec* – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
7. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *frcdus* – Force to DUS  
See definition of output parameter *frdus* in “RTRV-STM64: Retrieve STM64 port” (5-223).

9. fsflpbkstat – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC192: Retrieve OC192 port” (5-261).
11. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
12. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. msrei – MS-REI mode  
See definition of output parameter *msrei* in “RTRV-STM64: Retrieve STM64 port” (5-223).
14. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. och – Optical Channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).
20. pmmsfesess – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfesess* in “RTRV-STM16: Retrieve STM16 port” (5-209).

21. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **polynomial** - Optical Channel Scrambling Polynomial  
See definition of output parameter ***polynomial*** in “RTRV-STM64: Retrieve STM64 port” (5-223).
25. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
28. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 33. *sfthr* – Signal Failure Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 34. *sltca* – Section and Line TCA Profile Pointer  
See definition of output parameter *rsmstca* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. *sonet* – SONET ASAP  
See definition of output parameter *sonet* in “RTRV-OC192: Retrieve OC192 port” (5-261).
- 36. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. *srlgList* – Shared Risk Link Group Identity List  
See definition of output parameter *srlgList* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 38. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 39. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 40. *strcfmt* – Format of outgoing J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 41. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 42. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC192: Retrieve OC192 port” (5-261).

**Example output**

```
ED-OC192:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;  
    UNITE-NE 00-11-28 08:00:00  
M 123456 COMPLD  
;  
    UNITE-NE 00-11-28 08:00:30  
A 001 REPT DBCHG
```

Port  
ED-OC192 notification

*TLI messages - configuration management*

"TIME=08-00-12,DATE=00-11-28:ED-OC192:1-1-#-#-1-  
1::inputsig=74-33-84,unequiposig=74-33-84:"  
;



## ENT-OC192 notification

---

**Output format** The ENT-OC192 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-OC192:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC192: Retrieve OC192 port” (5-261).

#### Spec block parameters

1. *adminCost* - Administrative Cost  
See definition of output parameter *adminCost* in “RTRV-OC48: Retrieve OC48 port” (5-252).
2. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC192: Retrieve OC192 port” (5-261).
5. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. *fec* – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
7. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *frcdus* – Force to DUS  
See definition of output parameter *frdus* in “RTRV-STM64: Retrieve STM64 port” (5-223).

9. fsflpbkstat – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC192: Retrieve OC192 port” (5-261).
11. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
12. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. msrei – MS-REI mode  
See definition of output parameter *msrei* in “RTRV-STM64: Retrieve STM64 port” (5-223).
14. ndetmd – Neighbor Detection Mode  
See definition of output parameter *ndetmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
15. neighborASTNNodeID - Neighbor ASTN Node Id  
See definition of output parameter *neighborASTNNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
16. neighborNodeID – Neighbor Node Id  
See definition of output parameter *neighborNodeID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
17. neighborPortID – Neighbor Port Id  
See definition of output parameter *neighborPortID* in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. och – Optical Channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).
20. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).



21. **pmmsneses** – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter ***pmmsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **pmode** – Port Mode  
See definition of output parameter ***pmode*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **pmrsneses** – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter ***pmrsneses*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **polynomial** - Optical Channel Scrambling Polynomial  
See definition of output parameter ***polynomial*** in “RTRV-STM64: Retrieve STM64 port” (5-223).
25. **portClass** – Port Class  
See definition of output parameter ***portClass*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
26. **portControl** – Port Control  
See definition of output parameter ***portControl*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
27. **propagationDelay** - Propagation Delay  
See definition of output parameter ***propagationDelay*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
28. **rstimca** – RS TIM Consequent Action Enable  
See definition of output parameter ***rstimca*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
29. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
32. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

- 33. **sfthr** – Signal Failure Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 34. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 35. **sonet** – SONET ASAP  
See definition of output parameter **sonet** in “RTRV-OC192: Retrieve OC192 port” (5-261).
- 36. **spm** – Section PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 37. **srlgList** – Shared Risk Link Group Identity List  
See definition of output parameter **srlgList** in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 38. **strefmt** – Format of incoming J0  
See definition of output parameter **strefmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 39. **strcout** – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 40. **strcwfmt** – Format of outgoing J0  
See definition of output parameter **strcwfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
- 41. **trbmd** – Tributary mode  
See definition of output parameter **trbmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
- 42. **unequiposig** – Unequipped Output Signal List  
See definition of output parameter **unequiposig** in “RTRV-OC192: Retrieve OC192 port” (5-261).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-OC192:1-1-#-#-1-
1::servcond=ENABLE, sdsfmode=POISSON,sdthr=-
6,brstthr=30,....,istd=SONET,
inputsig=1921,unequiposig=1921"
;
```



## DLT-OC192 notification

---

**Output format** The DLT-OC192 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-OC192:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC192: Retrieve OC192 port” (5-261).

**Example output**

```
UNITE-NE 00-11-20 8:01:03
A 611 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-OC192:1-1-#-#-4-1"
;
```



## ED-OC192 autonomous notifications

---

|                                                                      |                                                                                                                                                                                |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LOS for transmission port<br/>OC192 clears</b>                    | If LOS is cleared and current port mode is AUTO, then portmode is updated (new value: MON). This update is reported via ED-OC192 notification with parameter <i>pmode</i> .    |
| <b>Change of the constituent<br/>rates status list</b>               | If <i>trbmd</i> =ADAPTIVE a change of the attribute <i>crstat</i> is notified by the related ED-OC192 notification.                                                            |
| <b>Change of neighbor node<br/>and neighbor port<br/>information</b> | If <i>ndetmd</i> =AUTO a change of the attributes <i>neighborNodeID</i> , <i>neighborPortID</i> or <i>neighborASTNNodeID</i> is notified by the related ED-OC192 notification. |



## ED-OC768: Edit OC768 port

---

The ED-OC768 command is used to provision all parameters related to an optical OC768 port.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
                      Priority: 1  
                      Abortable: no

**Input format**      Command Syntax: ED-OC768:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
       See definition of output parameter *aid* in “RTRV-OC768: Retrieve OC768 port” (5-269).
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1.    *brstintvl* – Bursty Interval  
       See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
2.    *brstthr* – Bursty Error Threshold  
       See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3.    *exprstrc* – Value of Expected J0  
       See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
4.    *fec* – FEC Enable  
       See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).

5. felpm – Far-end Line PM Enable  
See definition of output parameter *felpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
6. frcdus – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC768: Retrieve OC768 port” (5-269).
8. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
9. nelpm – Near-End Line PM Enable  
See definition of output parameter *nelpm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
10. och – Optical Channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).
11. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. pmmsneses – Performance Monitoring Line/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
14. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter *rstimca* in “RTRV-OC48: Retrieve OC48 port” (5-252).

16. **rstimmon** – RS TIM Monitor Enable  
See definition of output parameter ***rstimmon*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter ***sdsfmode*** in “RTRV-OC48: Retrieve OC48 port” (5-252).
18. **sdthr** – Signal Degrade Threshold  
See definition of output parameter ***degthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
19. **servcond** – Service Condition  
See definition of output parameter ***servcond*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
20. **sfthr** – Signal Failure Threshold  
See definition of output parameter ***dexcthr*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
21. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter ***rsmstca*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **sonet** – SONET ASAP  
See definition of output parameter ***sonet*** in “RTRV-OC768: Retrieve OC768 port” (5-269).
23. **spm** – Section PM Enable  
See definition of output parameter ***rspm*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **strcfmt** – Format of incoming J0  
See definition of output parameter ***strcfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **strcout** – Value of outgoing J0  
See definition of output parameter ***strcout*** in “RTRV-STM16: Retrieve STM16 port” (5-209).
26. **strcwfmt** – Format of outgoing J0  
See definition of output parameter ***strcwfmt*** in “RTRV-STM16: Retrieve STM16 port” (5-209).

27. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
28. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC768: Retrieve OC768 port” (5-269).

**Output format** If the ED-OC768 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification is reported by means of an ED-OC768 notification for port (except for parameter *istd*; see below).

**Switching of interface standard – Ignore other parameters**

If additional parameters beside *istd* are specified with the *ED-rr* command they will be ignored by the NE.

This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

**Switching of interface standard – FM impact**

The change of the interface standard of a port from SONET to SDH has the following impact related to Fault Management:

- all SONET alarms related to that port are cleared
- the corresponding SDH alarms are raised.

**Switching of tributary mode**

When changing the parameter *trbmd* – tributary mode from FIXED to ADAPTIVE the parameter *crstat* may change its value, too, depending



on the current input signal structure. This change is notified using the related ED-OC768 notification.

When changing the parameter *trbmd* – tributary mode from ADAPTIVE to FIXED the parameter *crstat* may change its value, too, depending on the current setting of parameter *inputsig*. This change is notified using the related ED-OC768 notification.

### **Supply outgoing J0 trace value and format together**

When changing the format of the outgoing J0 trace *strcwfmt*, the parameter *strcout* specifying the outgoing J0 trace is always supplied within the same TL1-command to always have a consistent set of trace format and value.

### **Supply outgoing J0 trace value according to format of outgoing J0**

When changing the outgoing J0 trace value, the format must be according to the format parameter *strcwfmt* for the outgoing J0 trace.

### **Switching of interface standard – Side effects on tributaries**

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### **Switching of interface standard – notification behavior**

See detailed behavior specification in “ED-OC48: Edit OC48 port” (5-437).

### **Switching of interface standard – PM impact**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Disabling of PM monitor**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### **Example input/output**

```
ED-OC768:UNITE-NE:1-1-#-#-1-1:123456::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;
    UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
    UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ED-OC768:1-1-#-#-1-1::inputsig=74-33-84,unequiposig=74-33-84:"
```

;

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-OC768 command.

**Validation rule: Enough bandwidth reserved for 2F protection group**

Check of the tributary rate (*inputsig/unequiposig*) if the port is member of a 2f protection group. Then the assigned bandwidth is max. half of the port’s bandwidth.

Error code: IDNV – Input, Data Not Valid, Assigned bandwidth exceeds half port’s bandwidth

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV – Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (*inputsig*) with existing cross-connections.

Error code: SNVS – Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (*unequiposig*) with existing cross-connections.

Error code: SNVS – Status, Not in Valid State, inconsistent output signal

**Validation rule: no cross-connections for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when cross-connections are still on this port.

Error code: SNVS - Status, Not in Valid State,  
cross-connections are still existing

**Validation rule: no loopbacks for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: no test access session for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when a tributary related to this port is used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, a test access session exists

**Validation rule: no protection for *istd*, *trbmd* change**

Check that *istd* is not changed or the *trbmd* is not set FIXED when this port is in an protection group.

Error code: SNVS - Status, Not in Valid State, a protection group is existing

**Validation rule: no path protection for *trbmd* change to ADAPTIVE**

Check that *trbmd* is not set to ADAPTIVE when this port is in a path protection group.

Error code: SNVS - Status, Not in Valid State, a path protection group is existing

**Validation rule: *servcond* must be enabled when timing source**

Check that the *servcond* is not disabled when the port is used as a timing source.

Error code: SNVS - Status, Not in Valid State, Timing reference is assigned to this port

**Validation rule: *servcond* must be enabled when DCC enabled**

Check that the *servcond* is not disabled when DCC channels are still existing for this port.

Error code: SNVS - Status, Not in Valid State, DCC channels are active for this port

**Validation rule: *servcond* must be enabled when *portClass*=INNI**

Check that the *servcond* is not OUTOFSERVICE when *portClass*=INNI.

Error Code: SNVS - Status, Not in Valid State, can not disable servcond for INNI ports

**Validation rule: *servcond* must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Supply of outgoing J0 trace**

Check that an outgoing J0 trace value (*strc* out) is supplied, too, if the format of the outgoing J0 trace (*strcwfmt*) is changed.

Error code: IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change.

**Validation rule: transmitted path trace length**

Check that the length of the outgoing J0 trace value (*strcout*) fits to the length given by outgoing J0 trace mode, i.e. write format (*strcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.

**Validation rule: Change of FEC parameters only if supported by the current circuit pack**

When changing one of the FEC-related parameters *fec*, *feccor* and *fectype* it will be checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code is used:

Error code: IDNV - Input, Data Not Valid, Parameter not supported

**Validation rule: Enabling of optical channel only if supported by the current circuit pack**

When enabling the optical channel via parameter *och* it shall be checked, whether the currently provisioned circuit pack supports this. If it is not supported the following error code shall be used:

Error code: Input, Data Not Valid, Parameter not supported

**Check CCB against *ptype* and *istd***

See definition of error response in “RTRV-STM16: Retrieve STM16 port” (5-209).

**Switching FEC**

See description in “ED-STM64: Edit STM64 port” (5-357) Detailed behavior section.

**Related TL1 messages**      “RTRV-OC768: Retrieve OC768 port” (5-269)

**References**      GR-199-CORE (ED-*rr*)



## ED-OC768 notification

---

**Output format** The ED-OC768 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-OC768:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC768: Retrieve OC768 port” (5-269).

#### Spec block parameters

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC768: Retrieve OC768 port” (5-269).
4. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. *fec* – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC768: Retrieve OC768 port” (5-269).
10. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. och – Optical Channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).
14. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. pmmsneses – Performance MonitoringLine/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
16. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter *rstimca* in “RTRV-OC48: Retrieve OC48 port” (5-252).
19. rstimmon – RS TIM Monitor Enable  
See definition of output parameter *rstimmon* in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. *sdsfmode* – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. *sdthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. *servcond* – Service Condition  
See definition of output parameter *servcond* in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. *sfthr* – Signal Failure Threshold  
See definition of output parameter *dexcthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. *sltca* – Section and Line TCA Profile Pointer  
See definition of output parameter *rsmstca* in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. *sonet* – SONET ASAP  
See definition of output parameter *sonet* in RTRV-OC768
26. *spm* – Section PM Enable  
See definition of output parameter *rspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. *strcfmt* – Format of incoming J0  
See definition of output parameter *strcfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. *strcout* – Value of outgoing J0  
See definition of output parameter *strcout* in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. *strcwfmt* – Format of outgoing J0  
See definition of output parameter *strcwfmt* in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. *trbmd* – Tributary mode  
See definition of output parameter *trbmd* in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. *unequiposig* – Unequipped Output Signal List  
See definition of output parameter *unequiposig* in “RTRV-OC768: Retrieve OC768 port” (5-269).

**Example output**

ED-OC768:UNITE-NE:1-1-#-#-1-1:123456:::INPUTSIG=74-33-84,UNEQUIPOSIG=74-33-84;



```
        UNITE-NE 00-11-28 08:00:00
M 123456 COMPLD
;
        UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ED-OC768:1-1-#-#-1-
1::inputsig=74-33-84,unequiposig=74-33-84:"
;
```



## ENT-OC768 notification

---

**Output format** The ENT-OC768 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-OC768:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC768: Retrieve OC768 port” (5-269).

#### Spec block parameters

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-STM16: Retrieve STM16 port” (5-209).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-STM16: Retrieve STM16 port” (5-209).
3. *crstat* – Constituent Rates Status list  
See definition of output parameter *crstat* in “RTRV-OC768: Retrieve OC768 port” (5-269).
4. *exprstrc* – Value of Expected J0  
See definition of output parameter *exprstrc* in “RTRV-STM16: Retrieve STM16 port” (5-209).
5. *fec* – FEC Enable  
See definition of output parameter *fec* in “RTRV-STM64: Retrieve STM64 port” (5-223).
6. *felpm* – Far-end Line PM Enable  
See definition of output parameter *femspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
7. *frcdus* – Force to DUS  
See definition of output parameter *frcdus* in “RTRV-STM16: Retrieve STM16 port” (5-209).
8. *fsflpbkstat* – Far Side Facility Loopback Status  
See definition of output parameter *fsflpbkstat* in “RTRV-STM16: Retrieve STM16 port” (5-209).

9. inputsig – Tributary Input Signal Rate List  
See definition of output parameter *inputsig* in “RTRV-OC768: Retrieve OC768 port” (5-269).
10. istd – Interface Standard  
See definition of input parameter *istd* in “ED-STM16: Edit STM16 port” (5-334).
11. lpbk – Loopback  
See definition of output parameter *lpbk* in “RTRV-STM16: Retrieve STM16 port” (5-209).
12. nelpm – Near-End Line PM Enable  
See definition of output parameter *nemspm* in “RTRV-STM16: Retrieve STM16 port” (5-209).
13. och – Optical Channel enable  
See definition of output parameter *och* in “RTRV-STM64: Retrieve STM64 port” (5-223).
14. pmmsfeses – Performance Monitoring Line/MS Far-End SES Threshold  
See definition of output parameter *pmmsfeses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
15. pmmsneses – Performance MonitoringLine/MS Near-End SES Threshold  
See definition of output parameter *pmmsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
16. pmode – Port Mode  
See definition of output parameter *pmode* in “RTRV-STM16: Retrieve STM16 port” (5-209).
17. pmrsneses – Performance Monitoring Section/RS Near-End SES Threshold  
See definition of output parameter *pmrsneses* in “RTRV-STM16: Retrieve STM16 port” (5-209).
18. rstimca – RS TIM Consequent Action Enable  
See definition of output parameter *rstimca* in “RTRV-OC48: Retrieve OC48 port” (5-252).
19. rstimmon – RS TIM Monitor Enable  
See definition of output parameter *rstimmon* in “RTRV-STM16: Retrieve STM16 port” (5-209).

20. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-OC48: Retrieve OC48 port” (5-252).
21. **sdthr** – Signal Degrade Threshold  
See definition of output parameter **degthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
22. **servcond** – Service Condition  
See definition of output parameter **servcond** in “RTRV-STM16: Retrieve STM16 port” (5-209).
23. **sfthr** – Signal Failure Threshold  
See definition of output parameter **dexcthr** in “RTRV-STM16: Retrieve STM16 port” (5-209).
24. **sltca** – Section and Line TCA Profile Pointer  
See definition of output parameter **rsmstca** in “RTRV-STM16: Retrieve STM16 port” (5-209).
25. **sonet** – SONET ASAP  
See definition of output parameter **sonet** in RTRV-OC768
26. **spm** – Section PM Enable  
See definition of output parameter **rspm** in “RTRV-STM16: Retrieve STM16 port” (5-209).
27. **strcfmt** – Format of incoming J0  
See definition of output parameter **strcfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
28. **strcout** – Value of outgoing J0  
See definition of output parameter **strcout** in “RTRV-STM16: Retrieve STM16 port” (5-209).
29. **strcwfmt** – Format of outgoing J0  
See definition of output parameter **strcwfmt** in “RTRV-STM16: Retrieve STM16 port” (5-209).
30. **trbmd** – Tributary mode  
See definition of output parameter **trbmd** in “RTRV-OC48: Retrieve OC48 port” (5-252).
31. **unequiposig** – Unequipped Output Signal List  
See definition of output parameter **unequiposig** in “RTRV-OC768: Retrieve OC768 port” (5-269).

**Example output**

```
UNITE-NE 00-11-28 08:00:30
A 001 REPT DBCHG
"TIME=08-00-12,DATE=00-11-28:ENT-OC768:1-1-#-#-4-1::
servcond=ENABLE, sdsfmode=POISSON,sdthr=-6,brstthr=30,
....,istd=SONET,inputsig=7681,unequiposig=7681"
;
```



## DLT-OC768 notification

---

**Output format**    The DLT-OC768 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-OC768:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-OC768: Retrieve OC768 port” (5-269).

**Example output**    UNITE-NE 00-11-20 8:01:03  
A 611 REPT DBCHG  
"Time=8-00-30,DATE=00-11-20:DLT-OC768:1-1-#-#-4-1";



## ED-OC768 autonomous notifications

---

**LOS for transmission port  
OC768 clears**

If LOS is cleared and currently port mode is AUTO, then portmode is updated (new value: MON). This update is reported via ED-OC768 notification with parameter *pmode*.

**Change of the constituent  
rates status list**

If *trbmd*=ADAPTIVE a change of the attribute *crstat* is notified by the related ED-OC768 notification.



# Tributary

## Overview

---

**Purpose**     The following chapter describes the commands for VC-3/STS-1 tributaries only. These tributaries are related to the optical/electrical interfaces on the OPn/EP155 packs.

SONET and SDH tributaries are supported to keep the compatibility to current generation equipment as far as possible and to be compatible with the Telcordia manager.

**Contents**

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| RTRV-VC3: Retrieve VC3 tributary   | <a href="#">5-499</a> |
| RTRV-STs1: Retrieve STS1 tributary | <a href="#">5-507</a> |
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## RTRV-VC3: Retrieve VC3 tributary

---

**General** The RTRV-VC3 command is used to retrieve all parameters related to a VC3 tributary.

Note: If a tributary AID (Access Identifier) is specified in the RTRV-VC3 request for a slot provisioned with a GE1 pack (e.g. 1-1-#-#-1-1-1 is used), then an empty reply is returned instead of: IENE - Input, Entity Not Exists.

For GE1 the “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202) command must be used.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-VC3:*tid:aid:ctag*;

### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
AID of a SDH tributary. The keyword **all** is allowed on slot, port and tributary level. The so called “dynamic parameters” shall be reported, if a **all** is used at the tributary level.  
The “dynamic parameters” are:

- ***ptrc, ptrcst, siglb, trailstate***.

Type: AID

Range: STS1NumAID.

3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Important!** To retrieve the dynamic parameters (***ptrc, ptrcst, siglb, trailstate*** ) of all tributaries use the “RTRV-ALL: Retrieve all” (5-512)) command and set the parameter ***dyn*** to YES.

## RTRV-VC3: Retrieve VC3 tributary

**Output format** In response to a valid RTRV-VC3 command, the following output report is returned:

```

    sid date time
M   ctag COMPLD
    "aid[:spec_block]"
        ...
        ...
    "aid[:spec_block]"
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. *aid* – Access Identifier  
Description: AID of the SDH tributary. The keyword *all* is not allowed on any level.  
Type: AID  
Range: STS1NumAID

### Spec block parameters

1. *brstintvl* – Bursty Interval  
Measurement period for determining bursty errors The setting of this parameter is used when *sdsfmode*=BURST.  
Type: numeric value set.  
Range: 2 to 10.  
Default: 7.
2. *brstthr* – Bursty Error Threshold  
The values are set in percent for the degradation threshold. The setting of this parameter is used when *sdsfmode*=BURST.  
Type: numeric value set.  
Range (as percentage ): 5, 10, 15, 20, 25, 30, ... 50.  
Default: 30.
3. *crslpbkrate* – Cross-connect loopback Rate  
It is independent from the current interface standard and therefore both SDH and SONET values are allowed.  
The parameter *crslpbkrate* is not reported if the parameter *crslpbkstat* indicates that no loopback is set.  
Type: alphanumeric value set.

Range:

- VC3
- VC4
- VC44C
- VC416C
- VC464C
- STS1
- STS3
- STS12
- STS48
- STS192

4. crslpbkstat – Cross-connect loopback status

State of cross- connect loopback.

Type: alphanumeric value set.

Range:

- YES = Cross-connect loopback is provisioned
- NO (default) = No cross-connect loopback is provisioned.

5. degthr – Signal Degrade Threshold

The setting of this parameter are used when *sdsfmode*=POISSON

Type: numeric value set.

Range (as exponents of 10): -5; -6 (default); -7; -8; -9

6. dexcthr – Excessive Degrade Threshold

The setting of this parameter are used when

*sdsfmode*=POISSON. The values are set as exponent of 10.

Type: numeric value set.

Range (as exponent of 10) -3 (default); -4; -5.

7. expthptrc – Expected Path Trace (J1)

The parameter *expthptrc* specifying the expected path trace is only relevant for the path trace supervision when the path trace read format *ptrcrfmt* is set to 16 (16-byte-specific-string mode).

Type: Hexadecimal digits

Range: 16 byte string. Each byte is expressed as two hexadecimal digits (example value: 6D). The first byte value is in the range from 80 to FF. The other byte values are in the range from 00 to 7F.

Default: 89hex followed by 15 bytes 00hex.

8. feppm – Far-End Path PM Enable  
It indicates whether this performance monitoring feature is enabled or disabled.  
Type: alphanumeric value set.  
Range:
  - ENABLE
  - DISABLE (default).
9. hptimmon – Path Trace Monitoring Enable (J1)  
Description: High order path trace (J1) identifier mismatch (TIM) monitor enable.  
This parameter is relevant only if the related trace read format *ptrcrfmt* is set to 16 (16-byte-specific-string mode).  
Type: alphanumeric value set.  
Range:
  - ENABLE
  - DISABLE (default).
10. neppm – Near-End Path PM Enable  
It indicates whether this performance monitoring feature is enabled or disabled.  
Type: alphanumeric value set.  
Range:
  - ENABLE
  - DISABLE (default).
11. pmhpfeses – Performance Monitoring Path Far-End SES Threshold  
This parameter describes the Path Far-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely errored. When the interface standard is changed the current default value is not adapted automatically.  
Type: numeric value set.  
Range (superset of ranges for SDH and SONET): 1-64000.  
Default: 2400.
12. pmhpneses – Performance Monitoring Path Near-End SES Threshold  
This parameter describes the Path Near-End SES threshold value. It indicates the number of errored blocks (SDH) or code violations (SONET) per second to declare a second as severely

errored. When the interface standard is changed the current default value is not adapted automatically.

Type: numeric value set.

Range (superset of ranges for SDH and SONET): 1-64000.

Default: 2400.

13. ptca – Path TCA Profile Pointer

Type: alphanumeric string.

Range: string with up to 24 characters.

Default: DEFAULT0.

14. ptrc – Path Trace (J1)

This parameter shows the value of the path trace identifier on the incoming path overhead J1 byte of a non-terminated tributary.

The length depends on the value of the parameter *ptrcrfmt*. The status of this value is contained in parameter *ptrcst*. If *ptrcst* indicates NORMAL, then ptrc contains a valid value. If *ptrcst* indicates UNAVAILABLE or AIS, then no valid incoming path trace identifier could be obtained by the system, e.g. due to a signal-fail condition or intra-NE communication problems, and the output parameter ptrc is omitted from the response. For concatenated tributaries the system shall not return this parameter (see detailed behavior below).

Type: hexadecimal (each byte is expressed as two hexadecimal digits. An example of a byte is 6D).

Range:

- 1 byte for non-specific repeating byte
- 16 byte: These 16 byte shall consist of 15 byte information and the CRC7 byte
- 64 bytes: This is a pure byte stream without any restrictions.

15. ptrcrfmt – Path Trace Read Format (J1)

The read format of J1, the incoming path trace (ptrc).

Type: numeric string.

Range:

- 2: for non-specific repeating byte
- 16: for 16 byte specific string.
- 64: for 64 byte string.

Default: 2.

## 16. ptrcst - Status of Incoming Path Trace (J1)

This parameter shows the status of the value of the incoming path trace identifier which is available with parameter ptrc. For concatenated tributaries the system shall not return this parameter (see detailed behavior below).

Type: alphanumeric value set.

Range:

- NORMAL: ptrc contains a valid value
- UNAVAILABLE: no valid value for ptrc could be obtained by the system
- AIS: no valid value for ptrc due to an SF condition.

## 17. sdsfmode – Signal Degrade/Signal Fail Mode

The degraded state is detected in BURST or POISSON mode.

Type: alphanumeric value set.

Range:

- BURST (default)
- POISSON

## 18. siglb - Signal Label

This parameter shows the value of the signal label on the incoming path overhead C2 byte of a non-terminated VC tributary. The parameter shall not be reported if the *trailstate* parameter indicates a fail condition, i.e. has the value AIS or UNAVAILABLE. For concatenated tributaries the system shall not return this parameter (see detailed behavior below) .

Type: alphanumeric value set.

Range: 00, 01, ..., FE, FF; i.e. two hexadecimal digits.

## 19. tcamd – TCA mode

This parameter shows the modulus of the PM thresholding.

Two thresholding methods are applicable:

- TR-only (also known as the implicit reset method)
- TR-RTR (also known as the explicit reset method).

Type: alphanumeric value set.

Range: TR, TRRTR (default).

## 20. tmonmd – Tributary Monitoring Mode

This parameter indicates the mode of the tributary.

Type: alphanumeric value set.

Range:

- MON = alarm monitoring is taking place on the port.
- NMON (default) = alarm monitoring is not occurring on the port.

21. trailstate - Trail State (C2)

It shall be possible to read the accepted trail value status (C2) of every VC which is terminated/monitored in the system. For concatenated tributaries the system shall not return this parameter (see detailed behavior below).

Type: alphanumeric value set.

Range:

- NORMAL: for accepted TSL which has valid payload type
- AIS: for SSF, VC-AIS, dTIM or dUNEQ
- UNAVAILABLE: for TSL which does not meet the acceptance criteria or no reporting is possible.

Default: UNAVAILABLE.

22. tribsdhpn – Tributary Alarm Severity Assignment Profile

This parameter points to a tributary ASAP profile name of type PATH for the designated AID.

Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.

Range: string with a maximum of 24 characters.

Default: DEFAULT.

### Detailed behavior description

#### Applicability for VC4 and concatenated signals

The RTRV-VC3 command is also applicable to VC4 tributaries. Even though a VC4 signal is not a concatenated VC3 signal in a strict sense, from a pointer processor viewpoint it can be considered to be comprised of three VC3 signals which have the properties of a concatenated signal. Thus it is not necessary to have a separate RTRV command for VC4.

#### Retrieval of concatenated tributaries

It is allowed to retrieve data from concatenated tributaries and the system responds by returning all parameters which are not derived from traffic. The details can be found in the parameter description.

## RTRV-VC3: Retrieve VC3 tributary

Concatenated tributaries are such tributaries, that are not the leftmost ones in concatenated signals, e.g. if an OC 48 port is provisioned for a fixed traffic of AU4-16c, STS-1 #1 represents the VC4-16c defined and all other STS-1s #2 to #48 do currently not represent valid substructures and thus are concatenated tributaries. The retrievable values e.g. for the STS-1s #2 to #48 are irrelevant for transmission.

Parameters derived from traffic are data like trace identifiers and signal labels which are collected from the actual input signal and thus do not exist for concatenated tributaries.

**Example input/output**

```
RTRV-VC3:LT-UNITE:1-1-#-#-3-1-1:123456;
LT-UNITE 00-11-27 08:00:00
M 123456 COMPLD
"1-1-#-#-3-1-1:crslpbkstat=NO,tmonmd=NMON,
tribsdhpn=Default,ptca=Default0,neppm=DISABLE,
pmhpnese=30,pmhpfese=30,degthr=-6,...,
ptrcrfmt=1,dexcthr=-3,ptrc=00,ptrcst=NORMAL,
sdsfmode=POISSON"
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-VC3 command.

**Check CCB against istd for related port****Validation rule: Check CCB against *istd***

Check whether the CCB fits to *istd* of the related port.

Error code: ICNV - Input, Command Not Valid, Interface Standard does not match.

E.g. DENY, if a command with rr=VC3 is made on a port which is provisioned as *istd*=SONET.

**References**

GR-199-CORE (RTRV-*rr*)





## RTRV-STs1: Retrieve STs1 tributary

---

**General** The RTRV-STs1 command is used to retrieve all parameters related to the STs1 tributary.

Note: If a tributary AID (Access Identifier) is specified in the RTRV-STs1 request for a slot provisioned with a GE1 pack (e.g. 1-1-#-#-1-1-1 is used), then an empty reply is returned instead of: IENE - Input, Entity Not Exists.

For GE1 the “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202) command must be used.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-STs1:*tid:aid:ctag*;

### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
AID of an SDH tributary. The keyword **all** is allowed on slot, port and tributary level. The so called “dynamic parameters” shall be reported, if a **all** is used at the tributary level.  
The “dynamic parameters” are:

- ***ptrc, ptrcst, siglb, trailstate***.

Type: AID

Range: STs1NumAID.

3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Important!** To retrieve the dynamic parameters (***ptrc, ptrcst, siglb, trailstate*** ) of all tributaries use the “RTRV-ALL: Retrieve all” (5-512)) command and set the parameter ***dyn*** to YES.

## RTRV-STs1: Retrieve STS1 tributary

**Output format** In response to a valid RTRV-STs1 command, the following output report is returned:

```

    sid date time
M   ctag COMPLD
    "aid[:spec_block]"
        ...
        ...
    "aid[:spec_block]"
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Output parameters****Command parameters**

1. *aid* – Access Identifier  
AID of the SONET tributary. The keyword *all* is not allowed on any level.  
Type: AID  
Range: STS1NumAID

**Spec block parameters**

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. *crslpbkrate* – Cross-connect loopback Rate  
See definition of output parameter *crslpbkrate* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
4. *crslpbkstat* – Cross-connect loopback status  
See definition of output parameter *crslpbkstat* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

## RTRV-STS1: Retrieve STS1 tributary

6. **dexcthr** – Excessive Degrade Threshold  
See definition of output parameter **dexcthr** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
7. **exphptrc** – Expected Path Trace (J1)  
See definition of output parameter **exphptrc** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
8. **feppm** – Far-End Path PM Enable  
See definition of output parameter **feppm** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
9. **loca** – Ring A-node TID  
See definition of output parameter **loca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
10. **locz** – Ring Z-node TID  
See definition of output parameter **locz** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
11. **hptimmon** – Path Trace Monitoring Enable (J1)  
See definition of output parameter **hptimmon** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
12. **neppm** – Near-End Path PM Enable  
See definition of output parameter **neppm** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
13. **pmhpfeses** – Performance Monitoring Path Far-End SES Threshold  
See definition of output parameter **pmhpfeses** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
14. **pmhpnese** – Performance Monitoring Path Near-End SES Threshold  
See definition of output parameter **pmhpnese** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
15. **pse** – PDI-P Switching Enable  
The PDI-P Switching Enable parameter indicates if the PDI-P contributes to the automatic path protection switch criteria.  
Type: alphanumeric value set  
Range:
  - ENABLE
  - DISABLE (default).

## RTRV-STS1: Retrieve STS1 tributary

16. **ptca** – Path TCA Profile Pointer  
See definition of output parameter **ptca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
17. **ptrc** – Path Trace (J1)  
See definition of output parameter **ptrc** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
18. **ptrcrfmt** - Path Trace Read Format (J1)  
See definition of output parameter **ptrcrfmt** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
19. **ptrcst** – Status of Incoming Path Trace  
See definition of output parameter **ptrcst** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
20. **sdsfmode** – Signal Degrade/Signal Fail Mode  
The degraded state is detected in BURST or POISSON mode.  
Type: alphanumeric value set.  
Range:
  - BURST
  - POISSON (default).
21. **siglb** - Signal Label  
See definition of output parameter **siglb** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
22. **tmonmd** – Tributary Monitoring Mode  
See definition of output parameter **tmonmd** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
23. **trailstate** - Trail State (C2)  
See definition of output parameter **trailstate** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
24. **tribsonetpn** – Tributary Alarm Severity Assignment Profile  
This parameter points to a tributary ASAP profile name of type PATH for the designated AID.  
Type: Alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: String with a maximum of 24 characters.  
Default: DEFAULT.

**Detailed behavior  
description**

**Applicability for STS3c and concatenated signals**

The RTRV-STST1 command is also applicable to STS3c tributaries. Even though a STS3c signal is not a concatenated STS1 signal in a strict sense, from a pointer processor viewpoint it can be considered to be comprised of three STS1 signals which have the properties of a concatenated signal. Thus it is not necessary to have a separate RTRV command for STS3c. Similarly, RTRV-STST1 is also applicable to other "concatenated" signals.

**Retrieval of concatenated tributaries**

The rules as defined for RTRV-VC3 apply as well.

**Example input/output**

```
RTRV-STST1:LT-UNITE:1-1-#-#-3-1-1:123456;  
LT-UNITE 00-11-27 08:00:00  
M 123456 COMPLD  
"1-1-#-#-3-1-1:crslpbkstat=N0,tmonmd=NMON,  
tribsonetpn=Default,ptca=Default0,feppm=DISABLE,  
pmhpnese=30,pmhpfese=30,degthr=-6,...,  
ptrcrfmt=1,dexcthr=-3,ptrc=00,ptrcst=NORMAL,  
sdsfmode=POISSON"  
;
```

**Error responses**

Refer to the "RTRV-HDR: Retrieve header" (5-8) command Error responses section. The error responses listed there also apply to the RTRV-STST1 command.

**Check CCB against *istd* of related port**

See definition of error response in "RTRV-VC3: Retrieve VC3 tributary" (5-499).

**Related TL1 messages**

"ED-STST1: Edit STS1 tributary" (5-521)

**References**

GR-199-CORE (RTRV-*rr*)



## RTRV-ALL: Retrieve all

---

The RTRV-ALL command is used to retrieve all parameters related to the tributaries.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format**      Command Syntax: RTRV-ALL:*tid:aid:ctag*[::*spec\_block*];

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
AID of SDH/SONET tributary. The keyword *all* is allowed on slot, port and tributary level.  
Type: AID  
Range: STS1NumAID
3.    *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameter

1.    *dyn* - Retrieve Dynamic Parameters  
This parameter controls whether dynamic parameters shall be reported with the command reply or not.  
The following output parameters of a tributary are affected:
  - *ptrc*
  - *ptrest*
  - *siglb*
  - *trailstate*.Type: alphanumeric value set  
Range: YES, report dynamic parameters in the reply as well; NO, do not report dynamic parameters in the reply.  
Default: NO.

**Output format** In response to a valid RTRV-ALL command, the following output report is returned:

```
sid date time
M ctag COMPLD
  "aid[:spec_block]"
  ...
  ...
  "aid[:spec_block]"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. *aid* – Access Identifier  
AID of the SDH/SONET tributary. The keyword *all* is not allowed on any level.  
Type: AID.  
Range: STS1NumAID.

### Spec block parameters

For the spec block parameters refer to the descriptions of the following commands “RTRV-VC3: Retrieve VC3 tributary” (5-499) and “RTRV-ST51: Retrieve ST51 tributary” (5-507) .

### Detailed behavior description

The command retrieves the spec block parameters for the tributaries specified by the input parameter *aid*.

### Example input/output

```
RTRV-ALL:LT-UNITE:1-1-#-#-ALL-ALL-ALL:123456;
LT-UNITE 00-11-27 08:00:00
M 123456 COMPLD
"1-1-#-#-3-1-1:crslpbkstat=NO,tmonmd=NMON,
tribsdhpn=Default,ptca=Default,neppm=DISABLE,
pmhpneses=30,pmhpfeses=30,degthr=-6,...,
ptrcrfmt=1,dexctr=-3,ptrc=00,sdsfmode=POISSON"
"1-1-#-#-3-1-2:crslpbkstat=NO,tmonmd=NMON,
tribsonetpn=Default,ptca=Default,neppm=DISABLE,
pmhpneses=30,pmhpfeses=30,degthr=-6,...,
```

```
ptrcrfmt=1,dexcthr=-3,ptrc=00,sdsfmode=POISSON"  
"1-1-#-#-3-1-3:crslpbkstat=N0,tmonmd=NMON,  
tribsonetpn=Default,ptca=Default,neppm=DISABLE,  
pmhpnases=30,pmhpfeses=30,degthr=-6,...,  
ptrcrfmt=1,dexcthr=-3,ptrc=00,sdsfmode=POISSON"  
.  
.  
.  
.  
.  
.  
.  
"1-1-#-#-3-1-192:crslpbkstat=N0,tmonmd=NMON,  
tribsonetpn=Default,ptca=Default,neppm=DISABLE,  
pmhpnases=30,pmhpfeses=30,degthr=-6,...,  
ptrcrfmt=1,dexcthr=-3,ptrc=00,sdsfmode=POISSON"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-ALL command.

**Related TL1 messages**

- “RTRV-VC3: Retrieve VC3 tributary” (5-499)
- “RTRV-ST51: Retrieve ST51 tributary” (5-507)

**References** GR-199-CORE (RTRV-*rr*)





## ED-VC3: Edit VC3 tributary

---

The ED-VC3 command is used to provision all parameters related to the tributary VC3.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: no

**Input format**      Command Syntax: ED-VC3:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
See definition of output parameter *aid* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. **brstintvl** – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
2. **brstthr** – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. **degthr** – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
4. **dexcth** – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

5. **exphptrc** – Expected Path Trace (J1)  
See definition of output parameter **exphptrc** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
6. **feppm** – Far-End Path PM Enable  
See definition of output parameter **feppm** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
7. **hptimmon** – Path Trace Monitoring Enable (J1)  
See definition of output parameter **hptimmon** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
8. **loca** – Ring A-node TID  
See definition of output parameter **loca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
9. **locz** – Ring Z-node TID  
See definition of output parameter **locz** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
10. **neppm** – Near-End Path PM Enable  
See definition of output parameter **neppm** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
11. **pmhpfeses** – Performance Monitoring Path Far-End SES Threshold  
See definition of output parameter **pmhpfeses** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
12. **pmhpneses** – Performance Monitoring Path Near-End SES Threshold  
See definition of output parameter **pmhpneses** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
13. **ptca** – Path TCA Profile Pointer  
See definition of output parameter **ptca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
14. **ptrcrfmt** – Path Trace Read Format (J1)  
See definition of output parameter **ptrcrfmt** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
15. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
16. **tcamd** – TCA mode  
See definition of output parameter **tcamd** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

17. tmonmd – Tributary Monitoring Mode  
See definition of output parameter *tmonmd* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
18. tribsdhpn – Tributary Alarm Severity Assignment Profile  
See definition of output parameter *tribsdhpn* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

**Output format** If the ED-VC3 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

The ED-VC3 command is also applicable to VC4 tributaries. Even though a VC4 signal is not a concatenated VC3 signal in a strict sense, from a pointer processor viewpoint it can be considered to be comprised of three VC3 signals which have the properties of a concatenated signal. Thus, it is not necessary to have a separate ED-VC4 command. Similarly, ED-VC3 is also applicable to VC4-4C and other “concatenated” tributaries.

Even if the command is used for a concatenated signal, it can be applied to any of the tributaries (for example, to the second tributary of the concatenated signal). However, only the parameters pertaining to the first tributary of a concatenated signal are used by the software to determine system operation. If the signal were changed from a concatenated signal to non-concatenated, then the parameters for each of the tributaries would be used by the software.

The command allows to modify all attributes listed above as input spec-block parameters. The modification is reported by means of an ED-VC3 notification for tributary.

**Signal degrade/signal fail mode provisioning**

If the attribute *sdsfmode* is changed then for all tributaries belonging to the same STS-12/VC4-4c group the attribute will also be changed according to value specified in the ED request.

A STS-12/VC4-4c group is composed of all tributaries whose Simple\_STS1NumAID is in the range from  $(k*12) + 1$  to  $(k+1)*12$  with  $k=0..63$ . The maximal value of  $k$  is derived from the port rate.

For efficiency reasons the notifications for tributaries are sent out as a single notification (so-called group notification) using a range over the aid which depends on the port rate of the associated port and the Simple\_STS1NumAID for that STS-12/VC4-4c group;

i.e. the Simple\_STS1NumAID field in the STS1NumAID is set to  $\langle M \rangle \&\& - \langle N \rangle$

- with  $M$  is first STS-1/AU-3 number of the STS-12/VC4-4c group,
- with  $N$  is last STS-1/AU-3 number of the STS-12/VC4-4c group.

If additional parameters besides *sdsfmode* are changed within the ED request then it is also valid to split the autonomous reporting in up to 3 notifications:

- one group notification for all tributaries with smaller Simple\_STS1NumAID as the one which is specified in the ED request.
- one single notification for the tributary which is specified in the ED request.
- one group notification for all tributaries with greater Simple\_STS1NumAID as the one which is specified in the ED request.

### Disabling of PM monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Changing TCA mode from TR-RTR to TR-only

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-VC3:UNITE-NE:1-1-#-#-3-1-1:123456:::tmonmd=MON,
tribsdhpn=Default,degthr=-6,dexcthr=-3,ptrcrfmt=1,
ptca=Default0,neppm=ENABLE,pmhpneses=30,pmhpfeses=30;
  UNITE-NE 00-10-14 14:59:09
M 123456 COMPLD
;
  UNITE-NE 00-10-14 14:59:09
```

```
A 592 REPT DBCHG
"TIME=14-59-09,DATE=00-10-14:ED-VC3:1-1-#-#-3-1-1::
tmonmd=MON,tribsdhpn=Default,degthr=-6,dexcthr=-3,
ptrcrfmt=1,ptca=Default0,neppm=ENABLE,pmhpneses=30,
pmhpfeses=30:"
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-VC3 command.

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation Rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Check CCB against *istd* of related port**

See definition of Error responses in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

**Related TL1 messages** “RTRV-STS1: Retrieve STS1 tributary” (5-507)

**References** GR-199-CORE (ED-*rr*)



## ED-STS1: Edit STS1 tributary

---

The ED-STS1 command is used to provision all parameters related to the tributary STS1.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: no

**Input format**      Command Syntax: ED-STS1:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
See definition of output parameter *aid* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).
3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. **brstintvl** – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
2. **brstthr** – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. **degthr** – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
4. **dexcth** – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

5. exphtrc – Expected Path Trace (J1)  
See definition of output parameter *exphtrc* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
6. feppm – Far-End Path PM Enable  
See definition of output parameter *feppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
7. hptimmon – Path Trace Monitoring Enable (J1)  
See definition of output parameter *hptimmon* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
8. loca – Ring A-node TID  
See definition of output parameter *loca* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
9. locz – Ring Z-node TID  
See definition of output parameter *locz* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
10. neppm – Near-End Path PM Enable  
See definition of output parameter *neppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
11. pmhpfeses – Performance Monitoring Path Far-End SES Threshold  
See definition of output parameter *pmhpfeses* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
12. pmhpneses – Performance Monitoring Path Near-End SES Threshold  
See definition of output parameter *pmhpneses* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
13. pse – PDI-P Switching Enable  
See definition of output parameter *pse* in “RTRV-ST51: Retrieve ST51 tributary” (5-507).
14. ptca – Path TCA Profile Pointer  
See definition of output parameter *ptca* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
15. ptrcrfmt – Path Trace Read Format (J1)  
See definition of output parameter *ptrcrfmt* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
16. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-ST51: Retrieve ST51 tributary” (5-507).



17. tmonmd – Tributary Monitoring Mode  
See definition of output parameter *tmonmd* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
18. tribsonetpn – Tributary Alarm Severity Assignment Profile  
See definition of output parameter *tribsonetpn* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).

**Output format** If the ED-STS1 command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The ED-STS1 command is also applicable to STS3c and other concatenated tributaries.

Even if the command is used for a concatenated signal, it can be applied to any of the tributaries (for example, to the second tributary of the concatenated signal). However, only the parameters pertaining to the first tributary of a concatenated signal are used by the software to determine system operation. If the signal were changed from a concatenated signal to non-concatenated, then the parameters for each of the tributaries would be used by the software.

The command allows to modify all attributes listed above as input spec-block parameters. The modification is reported by means of an ED-STS1 notification for tributary.

### **Signal degrade/signal fail mode provisioning**

Refer to the detailed behavior of the “ED-VC3: Edit VC3 tributary” (5-515) command for details on Signal Degrade/Signal Fail Mode Provisioning for tributaries.

### **Disabling of PM monitor**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

**Example input/output**

```
ED-STS1:UNITE-NE:1-1-#-#-3-1-1:123456:::tmonmd=MON,
tribsonetpn=Default,degthr=-6,dexctr=-3,ptrcrfmt=1,
ptca=Default0,neppm=ENABLE,pmhpnese=30,pmhpfese=30;
    UNITE-NE 00-10-14 14:59:09
M 123456 COMPLD
;
    UNITE-NE 00-10-14 14:59:09
A 592 REPT DBCHG
"TIME=14-59-09,DATE=00-10-14:ED-STS1:1-1-#-#-3-1-1::
tmonmd=MON,tribsonetpn=Default,degthr=-6,dexctr=-3,
ptrcrfmt=1,ptca=Default0,neppm=ENABLE,pmhpnese=30,
pmhpfese=30:"
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the ED-STS1 command.

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

**Error code:** IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation Rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

**Error code:** SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Check CCB against *istd* of related port**

See definition of Error responses in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

**Related TL1 messages** “RTRV-VC3: Retrieve VC3 tributary” (5-499)

**References** GR-199-CORE (ED-*rr*)



## ED-VC3 notification

---

**Output format** The ED-VC3 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-VC3:*aid::spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

#### Spec block parameters

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
4. *crslpbkrate* – Cross-connect loopback Rate  
See definition of output parameter *crslpbkrate* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
5. *crslpbkstat* – Cross-connect loopback Status  
See definition of output parameter *crslpbkstat* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
6. *dexcthr* – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
7. *exphptrc* – Expected Path Trace (J1)  
See definition of output parameter *exphptrc* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
8. *feppm* – Far-End Path PM Enable  
See definition of output parameter *feppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

9. hptimmon – Path Trace Monitoring Enable (J1)  
See definition of output parameter **hptimmon** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
10. loca – Ring A-node TID  
See definition of output parameter **loca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
11. locz – Ring Z-node TID  
See definition of output parameter **locz** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
12. neppm – Near-End Path PM Enable  
See definition of output parameter **neppm** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
13. pmhpfeses – Performance Monitoring Path Far-End SES Threshold  
See definition of output parameter **pmhpfeses** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
14. pmhpneses – Performance Monitoring Path Near-End SES Threshold  
See definition of output parameter **pmhpneses** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
15. ptca – Path TCA Profile Pointer  
See definition of output parameter **ptca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
16. ptrcrfmt – Path Trace Read Format (J1)  
See definition of output parameter **ptrcrfmt** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
17. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
18. tcamd – TCA mode  
See definition of output parameter **tcamd** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
19. tmonmd – Tributary Monitoring Mode  
See definition of output parameter **tmonmd** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
20. tribsdhpn – Tributary Alarm Severity Assignment Profile  
See definition of output parameter **tribsdhpn** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

**Example output**

```
ED-VC3:UNITE-NE:1-1-#-#-3-1-1:123456:::tmonmd=MON,
tribsdhpn=Default,degthr=-6,dexcthr=-3,ptrcrfmt=1,
ptca=Default0,neppm=ENABLE,pmhpneses=30,pmhpfeses=30;
    UNITE-NE 00-10-14 14:59:09
M 123456 COMPLD
;
    UNITE-NE 00-10-14 14:59:09
A 592 REPT DBCHG
    "TIME=14-59-09,DATE=00-10-14:ED-VC3:1-1-#-#-3-1-1::
    tmonmd=MON,tribsdhpn=Default,degthr=-6,dexcthr=-3,
    ptrcrfmt=1,ptca=Default0,neppm=ENABLE,pmhpneses=30,
    pmhpfeses=30:"
;
```



## ENT-VC3 notification

---

**Output format** The ENT-VC3 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-VC3:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

#### Spec block parameters

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. *crslpbkstat* – Cross-connect loopback Status  
See definition of output parameter *crslpbkstat* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
4. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
5. *dexcth* – Excessive Degrade Threshold  
See definition of output parameter *dexcth* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
6. *exphptrc* – Expected Path Trace (J1)  
See definition of output parameter *exphptrc* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
7. *feppm* – Far-End Path PM Enable  
See definition of output parameter *feppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
8. *hptimmon* – Path Trace Monitoring Enable (J1)  
See definition of output parameter *hptimmon* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

9. loca – Ring A-node TID  
See definition of output parameter *loca* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
10. locz – Ring Z-node TID  
See definition of output parameter *locz* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
11. neppm – Near-End Path PM Enable  
See definition of output parameter *neppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
12. pmhpfeses – Performance Monitoring Path Far-End SES Threshold  
See definition of output parameter *pmhpfeses* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
13. pmhpnese – Performance Monitoring Path Near-End SES Threshold  
See definition of output parameter *pmhpnese* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
14. ptca – Path TCA Profile Pointer  
See definition of output parameter *ptca* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
15. ptrcrfmt – Path Trace Read Format (J1)  
See definition of output parameter *ptrcrfmt* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
16. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
17. tcamd – TCA mode  
See definition of output parameter *tcamd* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
18. tmonmd – Tributary Monitoring Mode  
See definition of output parameter *tmonmd* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
19. tribsdhpn – Tributary Alarm Severity Assignment Profile  
See definition of output parameter *tribsdhpn* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

**Example output**

```
UNITE-NE 00-10-14 14:59:09
A 592 REPT DBCHG
```



```
"TIME=14-59-09,DATE=00-10-14:ENT-VC3:1-1-#-#-3-1-1::  
tmonmd=MON,tribsdhpn=Default,...,pmhpneses=30,  
pmhpfeses=30"
```

;



## DLT-VC3 notification

---

**Output format**    The DLT-VC3 notification uses the general format of a REPT DBCHG (Report Database Change) notification.  
Syntax: DLT-VC3:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

**Example output**    UNITE-NE 00-11-20 8:01:03  
A 612 REPT DBCHG  
"Time=8-00-30,DATE=00-11-20:DLT-VC3:1-1-#-#-4-1-1&&-  
768"  
;



## ED-STS1 notification

---

**Output format** The ED-STS1 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-STS1:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).

#### Spec block parameters

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. *crslpbkrate* – Cross-connect loopback Rate  
See definition of output parameter *crslpbkrate* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
4. *crslpbkstat* – Cross-connect loopback Status  
See definition of output parameter *crslpbkstat* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).
5. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
6. *dexcthr* – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
7. *exphptrc* – Expected Path Trace (J1)  
See definition of output parameter *exphptrc* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
8. *feppm* – Far-End Path PM Enable  
See definition of output parameter *feppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

9. **hptimmon** – Path Trace Monitoring Enable (J1)  
See definition of output parameter **hptimmon** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
10. **loca** – Ring A-node TID  
See definition of output parameter **loca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
11. **locz** – Ring Z-node TID  
See definition of output parameter **locz** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
12. **neppm** – Near-End Path PM Enable  
See definition of output parameter **neppm** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
13. **pmhpfeses** – Performance Monitoring Path Far-End SES Threshold  
See definition of output parameter **pmhpfeses** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
14. **pmhpnese** – Performance Monitoring Path Near-End SES Threshold  
See definition of output parameter **pmhpnese** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
15. **pse** – PDI-P Switching Enable  
See definition of output parameter **pse** in “RTRV-STS1: Retrieve STS1 tributary” (5-507).
16. **ptca** – Path TCA Profile Pointer  
See definition of output parameter **ptca** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
17. **ptrcrfmt** – Path Trace Read Format (J1)  
See definition of output parameter **ptrcrfmt** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
18. **sdsfmode** – Signal Degrade/Signal Fail Mode  
See definition of output parameter **sdsfmode** in “RTRV-STS1: Retrieve STS1 tributary” (5-507).
19. **tmonmd** – Tributary Monitoring Mode  
See definition of output parameter **tmonmd** in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
20. **tribsonetpn** – Tributary Alarm Severity Assignment Profile  
See definition of output parameter **tribsonetpn** in “RTRV-STS1: Retrieve STS1 tributary” (5-507).

**Example output**

```
ED-STS1:UNITE-NE:1-1-#-#-3-1-1:123456:::tmonmd=MON,
tribsonetpn=Default,degthr=-6,dexcthr=-3,ptrcrfmt=1,
ptca=Default0,neppm=ENABLE,pmhpneses=30,pmhpfeses=30;
    UNITE-NE 00-10-14 14:59:09
M 123456 COMPLD
;
    UNITE-NE 00-10-14 14:59:09
A 592 REPT DBCHG
"TIME=14-59-09,DATE=00-10-14:ED-STS1:1-1-#-#-3-1-1::
tmonmd=MON,tribsonetpn=Default,degthr=-6,dexcthr=-3,
ptrcrfmt=1,ptca=Default0,neppm=ENABLE,pmhpneses=30,
pmhpfeses=30:"
;
```



## ENT-STS1 notification

---

**Output format** The ENT-STS1 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-STS1:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).

#### Spec block parameters

1. *brstintvl* – Bursty Interval  
See definition of output parameter *brstintvl* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
2. *brstthr* – Bursty Error Threshold  
See definition of output parameter *brstthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
3. *crslpbkstat* – Cross-connect loopback Status  
See definition of output parameter *crslpbkstat* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).
4. *degthr* – Signal Degrade Threshold  
See definition of output parameter *degthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
5. *dexcthr* – Excessive Degrade Threshold  
See definition of output parameter *dexcthr* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
6. *exphptrc* – Expected Path Trace (J1)  
See definition of output parameter *exphptrc* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
7. *feppm* – Far-End Path PM Enable  
See definition of output parameter *feppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
8. *hptimmon* – Path Trace Monitoring Enable (J1)  
See definition of output parameter *hptimmon* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).

9. loca – Ring A-node TID  
See definition of output parameter *loca* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
10. locz – Ring Z-node TID  
See definition of output parameter *locz* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
11. neppm – Near-End Path PM Enable  
See definition of output parameter *neppm* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
12. pmhpfeses – Performance Monitoring Path Far-End SES Threshold  
See definition of output parameter *pmhpfeses* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
13. pmhpnese – Performance Monitoring Path Near-End SES Threshold  
See definition of output parameter *pmhpnese* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
14. pse – PDI-P Switching Enable  
See definition of output parameter *pse* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).
15. ptca – Path TCA Profile Pointer  
See definition of output parameter *ptca* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
16. ptrcrfmt – Path Trace Read Format (J1)  
See definition of output parameter *ptrcrfmt* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
17. sdsfmode – Signal Degrade/Signal Fail Mode  
See definition of output parameter *sdsfmode* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).
18. tmonmd – Tributary Monitoring Mode  
See definition of output parameter *tmonmd* in “RTRV-VC3: Retrieve VC3 tributary” (5-499).
19. tribsonetpn – Tributary Alarm Severity Assignment Profile  
See definition of output parameter *tribsonetpn* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).

**Example output**

```
UNITE-NE 00-10-14 14:59:09
A 592 REPT DBCHG
```

```
"TIME=14-59-09,DATE=00-10-14:ENT-STS1:1-1-#-#-3-1-1::  
tmonmd=MON,tribsonetpn=Default,...,pmhpneses=30,  
pmhpfeses=30"  
;
```





## DLT-STS1 notification

---

**Output format** The DLT-STS1 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax DLT-STS1:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of output parameter *aid* in “RTRV-STS1: Retrieve STS1 tributary” (5-507).

### Example output

```
UNITE-NE 00-11-20 8:01:03
A 612 REPT DBCHG
"Time=8-00-30,DATE=00-11-20:DLT-STS1:1-1-#-#-4-1-1&&-
768"
;
```







# 6 TL1 messages - fault management

## Overview

---

**Purpose** This section contains the TL1 interface definition for the domain *fault management*.

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# Introduction

## Overview

---

**Purpose** This chapter presents general information necessary to understand the subsequent sections.

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## Alarms, events, ASAPs

---

**Alarms/events** The system reports failures via alarms and events. An alarm/event can be persistent or transient. If it is persistent then a declaration (when the alarm will be raised) and a clear (when the alarm will be cleared) message will be sent by the NE. If it is transient only a declaration message will be sent.

Each one has a probable cause assigned. This is an identifier for the alarm/event. It will be reported via the *condtype* parameter in several commands/messages.

Alarms (conditions) with the severity Critical, Major, or Minor – will be reported via REPT ALM and can be retrieved via RTRV-ALM. Events/Alarms (conditions) with severity Warning/Not-Alarmed – will be reported via REPT EVT and can be retrieved via RTRV-COND. Alarms of environmental points will be not reported and retrieved via this commands. Refer to MDI/MDO description. The different reporting messages and retrieve commands are because of TL1 requirements.

**Service affecting / non service affecting** An alarm can be service affecting (sa) or non service affecting (nsa). This indicates if transmission on a path may be affected (sa) or not (nsa). It is only a well educated guess based on the limited view of a single NE.

**Alarm severity** Each alarm/event will be reported with a severity. The severity specifies the urgency of the alarm/event. The severity which will be sent for a specific probable cause can be configured via ASAPs.

The NE supports the following severities:

- CR – Critical (ITU / Telcordia)
- MJ – Major (ITU / Telcordia)
- MN – Minor (ITU / Telcordia)
- NA – Warning (ITU) / Not-Alarmed (Telcordia)
- NR – Non-Alarmed (ITU) / Not-Reported (Telcordia).

**ASAPs** Alarm Severity Assignment Profiles (ASAP) assign for each probable cause and if applicable service affecting and non service affecting independent a severity. Each ASAP parameter of an ASAP refers to a

probable cause and if applicable for service affecting or not. There are different types of ASAPs which defines the severities for different sets of probable causes. An entity which can raise an alarm/event will be assigned an ASAP which defines for the specific alarms/events of the entity the severity. For each ASAP type a default ASAP exists in the NE, which cannot be deleted. ASAPs can be created via ENT-ASAP-PROF, edited via ED-ASAP-PROF, deleted via DLT-ASAP-PROF and retrieved via RTRV-ASAP-PROF.

#### **SONET / SDH Mode**

The NE does not distinguish between SONET and SDH. For both the same alarms will be reported and only one set of severities is supported. Alarms use probable causes there applicable from the Telcordia ("SONET world") standard. For alarm description is system specific and not adapted to Telcordia standards.

For severities the notation is used like described in the TL1 standards of telcordia. For explanation the meaning in the SONET and SDH world is added.





## MDI / MDO

---

**MDI** *Miscellaneous Discrete Inputs* (MDI / environmental point) are used to have some external input which can raise alarms like from a fire detector. The name and alarm description of an MDI can be configured. The general discussion for alarms/events is also true for MDIs. Only the alarms will be reported via REPT-ALM-ENV and can be retrieved via RTRV-ALM-ENV. The configuration of MDIs can be edited via SET-ATTR-ENV and retrieved via RTRV-ATTR-ENV.

**MDO** *Miscellaneous Discrete Outputs* (MDO / external control) are outputs which can operate equipment outside of the NE like a lamp. Each MDO has a name which can be configured. MDOs can be configured via SET-ATTR-CONT and can be retrieved via RTRV-ATTR-CONT.

MDOs can be operated in two modes: automatically and via management commands. For the automatic mode a MDO gets assigned a probable cause. If at least one alarm of this probable cause is active then the MDO will be operated. For operation with the management commands no probable cause must be assigned to the MDO. The MDO can be operated via OPR-EXT-COND and RLS-EXT-COND. The control state of a MDO can be retrieved with the RTRV-EXT-CONT command.



# Alarm assignment profiles

## Overview

---

**Purpose** This section comprises messages to handle alarm assignment profiles (ASAPs).

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## RTRV-ASAP-PROF: Retrieve ASAP profile

---

The RTRV-ASAP-PROF command retrieves information about one or more alarm severity assignment profile(s).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-ASAP-PROF:*tid*::*ctag*::*pftype*[*pfname*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
3. *pftype* – Profile Type  
This parameter indicates the type of the ASAP (ASAP type).  
Type: alphanumeric value set. A '-' is also allowed for the values  
Range:
  - DCN: Data Communications Network
  - ENET: Ethernet
  - ENV: Environmental (Miscellaneous Discrete)
  - EQUIP-PROT: Equipment with Protection State Dependence
  - EQUIP-UNPROT: Equipment unprotected
  - MSSPRING-BLSR: MS-SPRING and Bilateral Switched Ring protection switch
  - MSP-APS: Automatic protection switch
  - PATH: Path MSA/NIM related
  - PATHTERM: Path Termination
  - PORT: SDH/SONET ports

## RTRV-ASAP-PROF: Retrieve ASAP profile

- SNCP-UPSR: Sub-Network Connection Protection and Unidirectional Path Switched Ring
  - TIMING: System Timing.
- Default Value: There is no default value. The *pftype* does not change.

4. *pfname* – ASAP Profile Name  
See output parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).  
OPTION: If *pfname* is omitted, then all profile names of type *pftype* will be returned.

**Output format** The following example shows the successful completion of the RTRV-ASAP-PROF command by the NE if the *pfname* parameter is omitted:

```

sid date time
M ctag COMPLD
  "pftype=pftype,name=DEFAULT"
  "pftype=pftype,name=pfname"
  ...
  "pftype=pftype,name=pfname"
;
```

There may be 0 or more *pfname* lines, where each line gives the name of an ASAP of type *pftype*. Even if ENT-ASAP-PROF has never been used to create a profile for this pftype, RTRV-ASAP-PROF will still return one profile: DEFAULT.

#### Normal completion response if *pfname* is specified

The following example shows the successful completion of the RTRV-ASAP-PROF command by the NE if the *pfname* parameter is specified:

```

sid date time
M ctag COMPLD
  "pftype=pftype,name=pfname"
  "spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Important!** Instead of returning an error message the RTRV-ASAP-PROF command returns success with an empty list when the user tries to retrieve non-existing profiles.

## Output parameters

### Command parameters

1. **pftype** – Profile Type  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
2. **pfname** – ASAP Profile Name  
This parameter indicates the name of the ASAP. The ASAP name distinguishes ASAPs of the same ASAP type specified by pftype. That means the same name can be used for several ASAP types.  
Type: alphanumeric character string. A hyphen ( - ) is additionally allowed in the name.  
Range: length 1-24 characters.  
For predefined ASAPs is the value of *pfname* “DEFAULT” , but it is no default name in general.

### Spec block parameters

1. **Alarm Severity Profile parameters**  
The spec block contains ASAP parameters. Each ASAP parameter defines for a probable cause (*condtype*) the assigned severity which will be reported when the alarm appears. If for one specific probable cause a service affecting (sa) or non service affecting (nsa) alarm can be reported then for each the sa-alarm and nsa-alarm an ASAP parameter exists.  
The severity indicates the urgency of an alarm. The severity of a sa-alarm must be more urgent than that of a nsa-alarm for the same *condtype*.  
The description of the ASAP parameters, the relation to the profile types and the default values are described in: “Alarms, events, ASAPs” (6-5).  
All parameters have the same type and value range.  
Type: alphanumeric value set.  
Range:
  - CR - Critical (ITU / Telcordia)
  - MJ - Major (ITU / Telcordia)
  - MN - Minor (ITU / Telcordia)

## RTRV-ASAP-PROF: Retrieve ASAP profile

- NA - Warning (ITU) / Not-Alarmed (Telcordia)
- NR - Non-Alarmed (ITU) / Not-Reported (Telcordia).

Example: Concrete ASAP parameters are *sa\_eqpt* and *nsa\_eqpt*. Both refers to the probable cause (*condtype*) EQPT and ASAP type EQUIPPROT. *sa\_eqpt* contains the assigned severity for the service affecting alarm of probable cause EQPT and *nsa\_eqpt* for the non service affecting alarm. *sa\_eqpt* can have the concrete value CR and *nsa\_eqpt* MN.

**Detailed behavior description**

For any specific profile type (*pftype*), each applicable specification block parameter will be reported.

The RTRV-ASAP-PROF command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful completion of the RTRV-ASAP-PROF command by the NE if *pfname* is omitted:

```
RTRV-ASAP-PROF:LT-UNITE-123::123456::ENV;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"Pftype=ENV,Name=DEFAULT"
"Pftype=ENV,Name=GTE"
;
```

The following example shows the successful completion of the RTRV-ASAP-PROF command by the NE if *pfname* and *pftype* is specified:

```
RTRV-ASAP-PROF:LT-UNITE-123::123456::ENET,GTE;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"Pftype=ENET,Name=GTE"
"sa_vcg_loa=MJ,nsa_vcg_loa=MN,sa_vcg_ssf=MJ,nsa_vcg_ssf=MN,
sa_vcg_plm=MN,nsa_vcg_plm=NA,sa_gfp_lof=CR,nsa_gfp_lof=MJ,sa_lan_los=CR,nsa_lan_los=MJ,sa_lan_anm=MN,nsa_lan_anm=NA"
;
```

**Error responses**     The RTRV-ASAP-PROF command does not generate any special error responses. The general error responses defined in “RTRV-HDR: Retrieve header” (5-8) are also valid for this command.

**Related TL1 messages**

- “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)
- “RTRV-ASAP-ASGNMT: Retrieve ASAP assignment” (6-14)



## RTRV-ASAP-ASGNMT: Retrieve ASAP assignment

---

The RTRV-ASAP-ASGNMT command retrieves a list of AIDs that identifies all users of an ASAP of a specific type and a specific name.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-ASAP-ASGNMT:*tid:aid:ctag::pftype,pfname*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. **ctag** – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
3. **aid** – Access Identifier  
Identifies the entity for which and all contained entities the ASAP assignments will be retrieved. Only for a shelf and all its contained entities all ASAP assignments can be retrieved.  
Type: AID.  
Range: ShelfAID.
4. **pftype** – Profile Type  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9)
5. **pfname** – Profile Name  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

**Output format** The following example shows the successful completion of the RTRV-ASAP-ASGNMT command by the NE:

```
sid date time
M ctag COMPLD
"aid_output:pftype,pfname"
(0 or more lines)
```



;

## Output parameters

### Command parameters

1. aid\_output – Access Identifier  
Access Identifier of an entity which has an ASAP pointer which points to an ASAP of *pftype*, *pfname*.  
Type: AID.  
Range: All AIDs of entities which contain a ASAP pointer. For entities see in the section "Entity - ASAP Relation".  
Default: None.
2. pftype – Profile Type  
See input parameter definition of "RTRV-ASAP-PROF: Retrieve ASAP profile" (6-9).
3. pfname – ASAP Profile Name  
See input parameter definition of "RTRV-ASAP-PROF: Retrieve ASAP profile" (6-9).

### Detailed behavior description

The RTRV-ASAP-ASGNMT command does not generate a REPT DBCHG message.

#### Behaviour: No matching profile name

If the system receives a command with a *pfname* that does not exist, then the command will successfully complete with an empty reply list. Thus no data will be returned. Note: A wrong pftype is handled by the general error response IDNV (RTRV-HDR).

### Example input/output

The following example shows the successful completion of the RTRV-ASAP-ASGNMT command by the NE:

```
RTRV-ASAP-ASGNMT:LT-UNITE-123:1-1:123456::SONET,GTE;  
LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-1-2:SONET,GTE"  
"1-1-#-#-1-3:SONET,GTE"  
"1-1-#-#-4-1:SONET,GTE"  
"1-1-#-#-4-1:SONET,GTE"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-ASAP-ASGNMT command.

**Validation rule: Invalid *pfname***

If the system receives a command with a *pfname* DEFAULT.

Error code: IDNV - Input, Data Not Valid, pfname must not be DEFAULT.

**Related TL1 messages**

- “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9)
- “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17).



## ENT-ASAP-PROF: Enter alarm severity assignment profile

---

The ENT-ASAP-PROF command is used to create a new ASAP and to define the name of the ASAP.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
 Priority: 1  
 Abortable: No

**Input format** Command Syntax: ENT-ASAP-PROF:*tid*::*ctag*::*pftype*.*pfname*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
3. *pftype* – Profile Type  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
4. *pfname* – Profile Name  
See output parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

**Output format** The following example shows the successful completion of the ENT-ASAP-PROF command by the NE:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** This command creates a new ASAP of ASAP type *pftype* and profile name *pfname*. All ASAP parameters defined for the specific *pftype*

will have default values; i.e. the values are derived from the actual values of the default ASAP (with name DEFAULT).

The maximum total number of ASAPs in a NE includes the predefined DEFAULT ASAPs. (Note: The maximum number of ASAPs is defined per system not per *pftype*.)

The modification is reported via the ENT-ASAP-PROF notification.

#### Example input/output

The following example shows the successful completion of the ENT-ASAP-PROF command by the NE:

```
ENT-ASAP-PROF:LT-UNITE-123::123456::ENET,att;  
    LT-UNITE 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the ENT-ASAP-PROF command.

##### Validation rule: Duplicate *pfname*

The *pfname* is already used for the specified *pftype*.

Error Code: IEAE - Input, Entity Already Exists, duplicate profile name

##### Validation rule: Maximum number of profiles

The maximum number of profiles is exceeded.

Error Code: SSRE - Status, System Resources Exceeded, limit of profiles exceeded

#### Related TL1 messages

- “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9)
- “RTRV-ASAP-ASGNMT: Retrieve ASAP assignment” (6-14).



## ENT-ASAP-PROF notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).  
 Syntax: The ENT-ASAP-PROF notification has the following specific syntax:

ENT-ASAP-PROF::*pftype.pfname:spec\_block*

### Output parameters

#### Command parameters

1. pftype – Profile Type  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
2. pfname – Profile Name  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

#### Spec block parameters

1. Alarm Severity Profile parameters  
see Alarm Severity Profile parameters definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

**Example output** The example shows a normal notification after an ENT-ASAP-PROF command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ENT-ASAP-PROF::ENET,att:sa_
_vcg_loa=MJ,nsa_vcg_loa=MN,sa_vcg_ssf=MJ,nsa_vcg_
ssf=MN,sa_vcg_plm=MN,nsa_vcg_plm=NA,sa_gfp_lof=CR,nsa_
gfp_lof=MJ,sa_lan_lof=CR,nsa_lan_lof=MJ,sa_lan_
anm=MN,nsa_lan_anm=NA"
;
```



## ED-ASAP-PROF: Edit alarm severity assignment profile

---

The ED-ASAP-PROF command is used to change the name or parameter values for an ASAP.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): M3  
                      Priority: 1  
                      Abortable: No

**Input format**      Command Syntax: ED-ASAP-PROF:*tid::ctag::pftype,pfname:spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       See definition of “RTRV-HDR: Retrieve header” (5-8).
2.    *ctag* – Correlation Tag  
       See definition of “RTRV-HDR: Retrieve header” (5-8).
3.    *pftype* – Profile Type  
       See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
4.    *pfname* – Profile Name  
       See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

#### Spec block parameters

1.    *newname* – New Profile Name  
       This parameter specifies the new ASAP name of the ASAP specified by *pftype* and *pfname*. The name of any default ASAP can not be changed.  
       See definition of *pfname* in the input parameters section of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
2.    Alarm Severity Profile parameters  
       See definition of Alarm Severity Profile parameters of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

**Output format**      The following example shows the successful completion of the ED-ASAP-PROF command by the NE:

```
sid date time
```

```
M  ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behavior description

If *newname* is specified the ASAP name will be changed to this new profile name. The specified ASAP parameters will be updated to its new severities.

If a ASAP parameter is not specified as part of the *spec\_block*, then its value remains unchanged.

The default ASAP parameter values of the profiles named DEFAULT can be modified.

The modification is reported via the ED-ASAP-PROF notification.

Note: ED-ASAP-PROF notification includes all parameters instead of only changed parameters.

#### Update affected entities

The new ASAP name (if specified) will be updated in all ASAP pointer attributes of other entities of the system. Notice: No REPT DBCHG message will be sent reporting this change.

Note: There will be notifications generated for the affected entities.

#### Example input/output

The following example shows the successful completion of the ED-ASAP-PROF command by the NE if the *pfname* will be changed:

```
ED-ASAP-PROF:LT-UNITE-123::123456:PORT,NUERNBERG:
newname=CHEMNITZ;
    LT-UNITE-123 00-01-01 08:00:00
M  123456 COMPLD
;
```

The following example shows the successful completion of the ED-ASAP-PROF command by the NE if assigned severities will be changed:

```
ED-ASAP-PROF:LT-UNITE-123::123456::PORT,NUERNBERG:sa_
los=MJ,sa_lof=MJ,sa_eber=MJ;
    LT-UNITE-123 00-01-01 08:00:00
M  123456 COMPLD
```

;

The following example shows the successful completion of the ED-ASAP-PROF command by the NE if assigned severities and the ASAP name will be changed:

```
ED-ASAP-PROF:LT-UNITE-123::123456::PORT,NUERNBERG:newname=
    CHEMNITZ,sa_los=MJ,sa_lof=MJ,sa_eber=MJ;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the ED-ASAP-PROF command.

#### Validation rule: *pfname* does not exist

An ASAP with the name *pfname* does not exist.

Error Code: SDNC - Status, Data Not Consistent, invalid instance of profile

#### Validation rule: Rename of default ASAP

A new profile name is specified for a default profile.

Error Code: IDNC - Input, Data, Not Consistent, new name for default profile

#### Validation rule: Inconsistent severity level

An ASAP parameter value has severity level inconsistency (for example, the Non Service Affecting value of a parameter is CR and the Service Affecting value is MJ).

Error Code: IDNC - Input, Data, Not Consistent, inconsistent ASAP parameter

#### Validation rule: Duplicate *newname*

The *newname* is already used for the specified *pftype*.

Error Code: IEAE - Input, Entity Already Exists, duplicate profile name



**Related TL1 messages**

- “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26)
- “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)
- “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9)
- “RTRV-ASAP-ASGNMT: Retrieve ASAP assignment” (6-14)



## ED-ASAP-PROF notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).

Syntax: The ED-ASAP-PROF notification has the following specific syntax:

ED-ASAP-PROF::*pftype**pfname*:*spec\_bloc*

### Output parameters

#### Command parameters

1. *pftype* – Profile Type  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
2. *pfname* – Profile Name  
This is the profile name. It is the previous profile name in case the profile name was changed with *newname*.

#### Spec block parameters

1. *newname* – New Profile Name  
See definition of “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20).
2. Alarm Severity Profile parameters  
See definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

**Example output** The example shows a normal notification after an ED-ASAP-PROF command if the ASAP name was changed:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ED-ASAP-PROF::ENET,
  NUERNBERG:newname=CHEMNITZ"
;
```

The example shows a normal notification after an ED-ASAP-PROF command if severities was changed:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ED-ASAP-PROF::ENET,
```

```
NUERNBERG:sa_vcg_loa=MJ,nsa_vcg_loa=MN,sa_vcg_ssf=MJ,  
nsa_vcg_ssf=MN"
```

;

The example shows a normal notification after an ED-ASAP-PROF command if the ASAP name and severities was changed:

```
LT-UNITE-123 00-01-01 08:00:50
```

```
A 815 REPT DBCHG
```

```
"TIME=08-00-12,DATE=00-01-01:ED-ASAP-PROF::ENET,
```

```
NUERNBERG:newname=FUERTH,sa_vcg_loa=MJ,nsa_vcg_loa=MN,  
sa_vcg_ssf=MJ,nsa_vcg_ssf=MN"
```

;



## DLT-ASAP-PROF: Delete alarm severity assignment profile

---

The DLT-ASAP-PROF command is used to delete an ASAP. Default ASAP's cannot be deleted.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
 Priority: 1  
 Abortable: No.

**Input format** Command Syntax: DLT-ASAP-PROF:*tid::ctag::pftype,pfname*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
3. *pftype* – Profile Type  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
4. *pfname* – Profile Name  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

**Output format** The following example shows the successful completion of the DLT-ASAP-PROF command by the NE:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The DLT-ASAP-PROF command deletes the ASAP specified by *pftype* and *pfname*. A profile must not be used when it will be deleted.

The modification is reported via the DLT-ASAP-PROF notification.

### Example input/output

The following example shows the successful completion of the DLT-ASAP-PROF command by the NE if the pname will be changed:

```
DLT-ASAP-PROF:LT-UNITE-123::123456::PORT,NUERNBERG;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the DLT-ASAP-PROF command.

#### Validation rule: *pname* does not exist

An ASAP with the name *pname* does not exist.

Error Code: SDNC - Status, Data Not Consistent, invalid instance of profile

#### Validation rule: ASAP in use

The addressed ASAP is still in use.

Error Code: SDNC - Status, Data Not Consistent, profile in use

#### Validation rule: *pname* is default

The addressed ASAP is a default one which can not be deleted.

Error Code: IDNC - Input, Data, Not Consistent, default profile

### Related TL1 messages

- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)
- “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9)
- “RTRV-ASAP-ASGNMT: Retrieve ASAP assignment” (6-14)

□

## DLT-ASAP-PROF notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).  
Syntax: The DLT-ASAP-PROF notification has the following specific syntax:  
DLT-ASAP-PROF::*pftype,pfname*

### Output parameters

#### Command parameters

1. pftype – Profile Type  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
2. pfname – Profile Name  
See input parameter definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).

**Example output** The following example shows a normal notification after an DLT-ASAP-PROF command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:DLT-ASAP-PROF::
ENET,NUERNBERG"
;
```



# Alarms

## Overview

---

**Purpose**    This section comprises messages to handle alarms.

**Contents**

|                               |                      |
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| RTRV-ALM: Retrieve alarm      | <a href="#">6-30</a> |
| RTRV-COND: Retrieve condition | <a href="#">6-37</a> |
| REPT ALM: Report alarm        | <a href="#">6-44</a> |
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## RTRV-ALM: Retrieve alarm

---

The RTRV-ALM command messages can be initiated by the user to retrieve all active alarms with properties defined by command parameters of level critical, major or minor from a NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax:  
RTRV-ALM[-*modifier*]:*tid*::*ctag*::[*ntfcncde*],[*condtype*],[*srveff*],,,;  
The last three trailing commas are used to specify that the optional parameters *locn*, *dirn*, *tmper* as defined in GR-833 are omitted since these parameters are not supported as input parameters.

### Input parameters

#### Command parameters

1. **modifier** – Message Modifier  
This parameter defines for which AID types the conditions will be retrieved. If the value 'ALL' is used, the specified parameter has no impact on the set of retrieved alarms delivered in the retrieve reply.  
Type: alphanumeric value set.  
Range: ALL. This requests all alarms.  
The modifier can be omitted. In this case the ALL modifier will be set implicit.
2. **tid** – Target Identifier  
See definition of "RTRV-HDR: Retrieve header" (5-8).
3. **ctag** – Correlation Tag  
See definition of "RTRV-HDR: Retrieve header" (5-8).
4. **ntfcncde** – Notification Code  
This is the alarm severity (alarm level) for which the current alarms are requested.  
Type: alphanumeric value set.  
Range: ALL, requests all alarms.  
*ntfcncde* can be omitted. In this case ALL will be set implicit.



## RTRV-ALM: Retrieve alarm

5. **condtype** – Condition Type  
This parameter identifies the type of alarm indication being reported.  
Type: alphanumeric value set.  
Range: ALL, requests all alarms.  
**condtype** can be omitted. In this case ALL will be set implicit.
6. **srveff** – Service Effect  
This parameter identifies the service affect of alarms being reported.  
Type: alphanumeric value set.  
Range: ALL, requests all alarms.  
**srveff** can be omitted. In this case ALL will be set implicit.

**Output format**

The following example shows the successful completion of the RTRV-ALM command by the NE:

```

sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,
  ocrtm:conddescr"
  (0 or more lines of the above)
;
```

If no alarms are raised only COMPLD will be returned.

The alarms are reported one line per condition, similar to the autonomous messages conveyed by REPT ALM.

Applicable output lines are ordered by the value of occurrence date (**ocrdat**) and occurrence time (**ocrtm**), with the most recent alarm listed first.

The output parameters **sid**, **date**, **time**, and **ctag** included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
This is the address of the entity for which an alarm condition is being reported.  
Type: AID.  
Range: All defined AIDs are allowed. It should be a valid AID for the specified *modifier*. Refer to the definition of AIDs.
2. aidtype – Access Identifier Type  
This parameter defines the AID type to which the alarm belongs.  
Type: alphanumeric value set.  
Range:
  - COM: Common. An alarm/event that applies to the whole NE system; for example, a processing error.
  - EQPT: An equipment-related alarm/event.
  - SYST: An alarm/event related to system timing.
  - OUTT: An alarm/event related to output timing.
  - STM1E: A facility-related alarm/event for synchronous transport mode 1 (electrical).
  - STM1: A facility-related alarm/event for synchronous transport mode 1.
  - STM4: A facility-related alarm/event for synchronous transport mode 4.
  - STM16: A facility-related alarm/event for synchronous transport mode 16.
  - STM64: A facility-related alarm/event for synchronous transport mode 64.
  - STM256: A facility-related alarm/event for synchronous transport mode 256.
  - OC3: A facility-related alarm/event at the optical carrier signal level 3.
  - OC12: A facility-related alarm/event at the optical carrier signal level 12.
  - OC48: A facility-related alarm/event at the optical carrier signal level 48.
  - OC192: A facility-related alarm/event at the optical carrier signal level 192

## RTRV-ALM: Retrieve alarm

- OC768: A facility-related alarm/event at the optical carrier signal level 768.
- 1GE: A facility-related alarm/event for 1 Gigabit Ethernet.
- VC3: A facility-related alarm/event for virtual container 3.
- VCG: A facility-related alarm/event for virtual concatenation group tributary.
- VC4: A facility-related alarm/event for virtual container 4
- VC44C: A facility-related alarm/event for a signal concatenated at 4 times the VC4 rate.
- VC416C: A facility-related alarm/event for a signal concatenated at 16 times the VC4 rate.
- VC464C: A facility-related alarm/event for a signal concatenated at 64 times the VC4 rate.
- STS1: A facility-related alarm/event at synchronous transport signal level 1.
- STS3C: A facility-related alarm/event at synchronous transport signal level 3.
- STS12C: A facility-related alarm/event at synchronous transport signal level 12.
- STS48C: A facility-related alarm/event at synchronous transport signal level 48.
- STS192C: A facility-related alarm/event at synchronous transport signal level 192.

Refer to “Alarms, events, ASAPs” (6-5) for the relation of alarm / entity / *aidtype*.

### 3. conddescr – Description of the Condition

This is a textual Description of the Condition.

Type: inner string of the format:

\“<category>, <entity>, <description>, <additional text>\” or

\“<category>, <entity>, <description>, <additional text>-cleared\”

(this form is used in REPT ALM/EVT for cleared alarms)

Range:

- category: is the category
- entity: is the entity for which the alarm is reported

## RTRV-ALM: Retrieve alarm

- description: is the Alarm description, the string is up to 32 characters

- additional text: additional text.

If there is no additional text, then the trailing comma may be omitted. For the values of **conddescr**, refer to “Alarm, event, ASAP tables” (6-96).

4. condtype – Condition Type

This parameter identifies the probable cause (type of alarm indication) being reported.

Type: alphanumeric value set.

Range: All defined probable causes. For the values of **condtypr**, refer to “Alarm, event, ASAP tables” (6-96).

5. ntfncnde – Notification Code

This is the alarm severity (alarm level) or if the alarm is cleared.

Type: alphanumeric value set.

Range:

- CR - Critical (ITU / Telcordia)
- MJ - Major (ITU / Telcordia)
- MN - Minor (ITU / Telcordia)
- CL - Cleared.

6. srveff – Service Effect

This parameter identifies the service affect of alarms being reported. It presents the “best guess” from a local system point of view.

Type: alphanumeric value set.

Range:

- SA: Service-Affecting alarm condition
- NSA: Non-Service-Affecting alarm condition.

## RTRV-ALM: Retrieve alarm

7. ocrdat – Occurrence Date  
This parameter indicates the raising / clearing date of the alarm.  
Type: value set of the format MM-DD.  
Range: MM represents the month, DD represents the day, leading zeros are not suppressed.
8. ocrtm – Occurrence Time  
This parameter indicates the raising / clearing time of the alarm.  
The accuracy should be +/- 1 second.  
Type: value set of the format HH-MM-SS.  
Range: HH represents the hours, MM represents the minutes, SS represents the seconds, leading zeros are not suppressed.

**Detailed behavior description**

RTRV-ALM retrieves all active alarms of level CR, MJ, MN.

Any alarm reported by an autonomous REPT ALM message which is active when a RTRV-ALM message is received, is included in the RTRV-ALM response message. Alarms of level NA are reported by RTRV-COND and not by RTRV-ALM.

RTRV-ALM is an on-demand version of the autonomous REPT ALM. The on-demand command only report alarms that are still set when the command is executed.

The REPT-ALM command does not generate a REPT DBCHG message.

```
RTRV-ALM:LT-UNITE-123::123456;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
    "1-1-#-#-4-1,STM16:CR,LOS,SA,01-01,07-29-13:
    \"Communication-Transport, STM16 port, Loss Of Signal\"
    "1-1-#-#-1-3,STM4:MJ,LOF,SA,12-31,03-50-32:
    \"Communication-Transport, STM4 port, Loss of Frame\"
;
```

**Example input/output**

The following example shows the successful completion of the RTRV-ALM command by the NE if no *modifier* is specified and all alarms will be retrieved for the whole NE:

The following example shows the successful completion of the RTRV-ALM command by the NE if the alarms for a specified *aid* will be retrieved:

**RTRV-ALM: Retrieve alarm**

```

RTRV-ALM:LT-UNITE-123:1-1-#-#-4-1:123456;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
    "1-1-#-#-4-1,STM16:CR,LOS,SA,01-01,07-29-13:
    \"Communication-Transport, STM16 port, Loss Of Signal\"";

```

The following example shows the successful completion of the **RTRV-ALM** command by the NE if no alarms are raised on the NE:

```

RTRV-ALM:LT-UNITE-123:1-1-#-#-3-1:123456;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
;

```

**Error responses**

Refer to the “**RTRV-HDR: Retrieve header**” (5-8) command error responses section. The error responses listed there also apply to the **RTRV-ALM** command.

**Related TL1 messages**

- “**ALW-MSG: Allow message**” (5-33)
- “**ENT-ASAP-PROF: Enter alarm severity assignment profile**” (6-17)
- “**ED-ASAP-PROF: Edit alarm severity assignment profile**” (6-20)
- “**RTRV-ASAP-PROF: Retrieve ASAP profile**” (6-9)
- “**INH-MSG: Inhibit message**” (5-31)
- “**REPT ALM: Report alarm**” (6-44)
- “**REPT-ALM-ENV: Report Alarm Environment**” (6-72)
- “**REPT EVT: Report event**” (6-47)
- “**RTRV-ALM-ENV: Retrieve alarm environment**” (6-60)
- “**RTRV-COND: Retrieve condition**” (6-37)
- “**RTRV-HDR: Retrieve header**” (5-8)

**References**

GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: NE and Transport Surveillance Messages



## RTRV-COND: Retrieve condition

---

RTRV-COND command messages can be initiated by the user to retrieve all active alarms of level NA – Not Alarmed (Telcordia ) / Warning (ITU).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax:  
RTRV-COND[*-modifier*]:*tid*::*ctag*::[*condtype*],,,[*tmper*];  
The last three trailing commas are used to specify that the optional parameters *locn*, *dirn*, *tmper* as defined in GR-833 are omitted since these parameters are not supported as input parameters.

### Input parameters

#### Command parameters

1. *modifier* – Message Modifier  
This parameter defines for which AID types the conditions will be retrieved. If the value ALL is used, the specified parameter has no impact on the set of retrieved alarms delivered in the retrieve reply.  
Type: alphanumeric value set.  
Range: ALL, this requests all alarms.  
The modifier can be omitted. In this case the ALL modifier will be set implicit.
2. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
3. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
4. *condtype* – Condition Type  
See definition of *condtype* in the input parameters section of “RTRV-ALM: Retrieve alarm” (6-30) command.
5. *tmper* – Time Period  
See definition in “RTRV-PM: Retrieve performance monitoring” (9-7) in the input parameters section.

RTRV-COND: Retrieve condition

**Output format** Normal completion response of successful session termination.

The following example shows the successful completion of the RTRV-COND command by the NE:

```

sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm
  [,,,conddescr]"
  (0 or more lines of the above)
;
```

If no alarms are raised only COMPLD will be returned.

Applicable output lines are ordered by the value of occurrence date (*ocrdat*) and occurrence time (*ocrtm*), with the most recent alarm listed first.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of "RTRV-HDR: Retrieve header" (5-8).

### Output parameters

1. aid – Access Identifier  
This is the address of the entity for which an alarm condition is being reported.  
Type: AID  
Range: All defined AIDs are allowed. It should be a valid AID for the specified *modifier*. Refer to the definition of AIDs.

### Command parameters

1. aidtype – Access Identifier Type  
This parameter defines the AID type to which the alarm belongs.  
Type: alphanumeric value set.  
Range:
  - COM: Common. An alarm/event that applies to the whole NE system; for example, a processing error.
  - EQPT: An equipment-related alarm/event.
  - ENV: An alarm/event related to an environmental point.
  - SYST: An alarm/event related to system timing.
  - OUTT: An alarm/event related to output timing.
  - STM1E: A facility-related alarm/event for synchronous transport mode 1 (electrical).



RTRV-COND: Retrieve condition

- STM1: A facility-related alarm/event for synchronous transport mode 1.
- STM4: A facility-related alarm/event for synchronous transport mode 4.
- STM16: A facility-related alarm/event for synchronous transport mode 16.
- STM64: A facility-related alarm/event for synchronous transport mode 64.
- STM256: A facility-related alarm/event for synchronous transport mode 256.
- OC3: A facility-related alarm/event at the optical carrier signal level 3.
- OC12: A facility-related alarm/event at the optical carrier signal level 12.
- OC48: A facility-related alarm/event at the optical carrier signal level 48.
- OC192: A facility-related alarm/event at the optical carrier signal level 192.
- OC768: A facility-related alarm/event at the optical carrier signal level 768.
- 1GE: A facility-related alarm/event for 1 Gigabit Ethernet.
- VC3: A facility-related alarm/event for virtual container 3.
- VCG: A facility-related alarm/event for virtual concatenation group tributary.
- VC4: A facility-related alarm/event for virtual container 4.
- VC44C: A facility-related alarm/event for a signal concatenated at 4 times the VC4 rate.
- VC416C: A facility-related alarm/event for a signal concatenated at 16 times the VC4 rate.
- VC464C: A facility-related alarm/event for a signal concatenated at 64 times the VC4 rate.
- STS1: A facility-related alarm/event at synchronous transport signal level 1.
- STS3C: A facility-related alarm/event at synchronous transport signal level 3.

RTRV-COND: Retrieve condition

- STS12C: A facility-related alarm/event at synchronous transport signal level 12.
- STS48C: A facility-related alarm/event at synchronous transport signal level 48.
- STS192C: A facility-related alarm/event at synchronous transport signal level 192.

Default: There is no default value.

2. **conddescr** – Description of the Condition

For events which belong to an ASAP profile, see definition of **conddescr** in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).

For TCA see definition of **conddescr** in the Output parameters section of “TCA notification” (9-19).

For ABN conditions see definition of **conddescr** in the Output parameters section of “REPT EVT: Report event” (6-47).

3. **condtype** – Condition Type

For events which belong to an ASAP profile, see definition of **condtype** in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).

For TCA see definition of **condtype** in the Output parameters section of “TCA notification” (9-19).

For ABN conditions see definition of **condtype** in the Output parameters section of “REPT EVT: Report event” (6-47).

4. **ntfcncde** – Notification Code

This is the alarm level (severity).

Type: alphanumeric value set.

Range: NA - Warning (ITU) / Not-Alarmed (Telcordia)

5. **ocrdat** – Occurrence Date

See definition of **ocrdat** in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).

6. **ocrtm** – Occurrence Time

See definition of **ocrtm** in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).

7. **srveff** – Service Affect

This parameter identifies the service affect of alarms being reported.

Type: alphanumeric value set.

**RTRV-COND: Retrieve condition**

Range:

- SA - Service affecting
- NSA - Non service affecting.

8. tmper – Time Period

See definition in “RTRV-PM: Retrieve performance monitoring” (9-7) in the input parameters section.

**Detailed behavior  
description**

RTRV-COND command messages can be initiated by the user to retrieve all active alarms of level NA – Not Alarmed (Telcordia ) / Warning (ITU) from a NE.

RTRV-COND is closely related to REPT EVT which autonomously reports when an persistent alarm of notification code NA either sets or clears or an transient event occurs (like reporting of protection switch states). RTRV-COND retrieves the REPT EVT events that are still set. protection switching events that are reported by REPT EVT are not reported by RTRV-COND (for example, the lockout of a timing reference is not reported by RTRV-COND).

In addition to reporting all active alarms of level NA previously reported by REPT EVT, RTRV-COND retrieves those reported by other autonomous messages.

The RTRV-COND command does not generate a REPT DBCHG message.

The RTRV-COND command will also report the active TCA-events, for port or trib entities, which work in SDH mode and the user has set the TCA mode tcamd of the entity to TR-RTR. By switching to TR-RTR the TCA events are reported as a standing condition, thus the system creates a raise and clear event. If TR-only is selected the TCA events are handled as a transient condition and therefore never reported by RTRV-COND. The SONET standard supports only TR-only mode.

**Example input/output**

The following example shows the successful completion of the RTRV-COND command by the NE.

```
RTRV-COND:LT-UNITE-123::123456;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"1-1-#-#-6-1,0C48:NA,AIS-L,NSA,01-01,07-59-59,,,,
\"Communication-Transport, 0C48 port, Alarm
```

RTRV-COND: Retrieve condition

```

Indication Signal\""
"MISC_IN3,COM:NA,MISC,NSA,01-01,07-20-15,,,,,
\Environment, Misc Discrete,door open\""
;

```

The following example shows the successful completion of the RTRV-COND command by the NE if an *aid* is specified:

```

RTRV-COND:LT-UNITE-123:MISC_IN3:123456;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"MISC_IN3,COM:NA,MISC,NSA,01-01,07-20-15,,,,,
\Environment, Misc Discrete,door open\""
;

```

The following example shows the successful completion of the RTRV-COND command by the NE if no conditions are raised:

```

RTRV-COND:LT-UNITE-123:MISC_IN3:123456;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
;

```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-ALM command.

### Related TL1 messages

- “ALW-MSG: Allow message” (5-33)
- “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9)
- “INH-MSG: Inhibit message” (5-31)
- “REPT ALM: Report alarm” (6-44)
- “REPT-ALM-ENV: Report Alarm Environment” (6-72)
- “REPT EVT: Report event” (6-47)
- “RTRV-ALM: Retrieve alarm” (6-30)

RTRV-COND: Retrieve condition

- “RTRV-ALM-ENV: Retrieve alarm environment” (6-60)
- “RTRV-HDR: Retrieve header” (5-8)

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: NE and Transport Surveillance Messages



## REPT ALM: Report alarm

---

REPT ALM messages are generated autonomously by the NE to report an alarm that requires immediate attention by the craft at the OS. Each alarm message has an alarm severity associated with it.

**Output format** The general output format of the REPT ALM message is defined as follows:

```
sid date time
almcde atag REPT ALM modifier
    "aid:ntfcncde,condtype,srveff,ocrdat,ocrtm:conddescr"
    (1 or more lines of the above)
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section for the RTRV-HDR command.

### Output parameters

#### Command parameters

1. almcde – Alarm Code  
The alarm code indicates the severity of the reported alarm or if the alarm is cleared.  
Type: value set  
Range:
  - \*C: Critical alarm
  - \*\*: Major alarm
  - \*: Minor alarm
  - A: Automatic message (nonalarm). This is used only to report a cleared alarm.
2. atag – Automatic Tag  
This parameter is used for message sequencing. The number is incremented by one for each autonomous message sent by the NE.  
Type: integer (3 digits).  
Range: 000 – 999 Leading zeros are not suppressed.

## REPT ALM: Report alarm

3. modifier – Message modifier  
Refer to the definition of the *aidtype* parameter in the “RTRV-ALM: Retrieve alarm” (6-30) command.
4. aid – Access Identifier  
Refer to the definition of the *aid* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
5. ntfncde – Notification Code  
This is the alarm severity of the reported Alarm or the clear information of a cleared Alarm.  
Type: alphanumeric value set.  
Range:
  - CR - Critical (ITU / Telcordia)
  - MJ - Major (ITU / Telcordia)
  - MN - Minor (ITU / Telcordia)
  - CL - Cleared.
6. condtype – Condition Type  
Refer to the definition of the *condtype* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
7. srveff – Service Effect  
Refer to the definition of the *srveff* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
8. ocrdat – Occurrence Date  
Refer to the definition of the *ocrdat* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
9. ocrtm – Occurrence Time  
Refer to the definition of the *ocrtm* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
10. conddescr – Description of the Condition  
Refer to the definition of the *conddescr* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.

## REPT ALM: Report alarm

**Detailed behavior description**

If an alarm has an severity of critical, major, or minor, then its occurrence will be reported in a REPT ALM message. An exception to this rule is an environmental alarm which is reported by a REPT ALM ENV autonomous message.

An alarm reported to the OS via the REPT ALM message has a corresponding REPT ALM clearance message that is generated when the alarm clears.

**Example input/output**

The following example shows an autonomous message REPT ALM for an LOS Alarm:

```
LT-UNITE-123 00-01-01 08:00:00
*C 126 REPT ALM 0C48
"1-1-#-#-3-1:CR,LOS,SA,01-01,07-29-13:\\"Communication-
Transport, 0C48 port, Loss Of Signal\\""
;
```

The following example shows an autonomous message REPT ALM for an LOS Alarm clear:

```
LT-UNITE-123 00-01-01 08:00:00
A 127 REPT ALM 0C48
"1-1-#-#-3-1:CL,LOS,SA,01-01,07-29-13:\\"Communication-
Transport, 0C48 port, Loss Of Signal-cleared\\""
;
```

**Related TL1 messages**

- “ALW-MSG: Allow message” (5-33)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “INH-MSG: Inhibit message” (5-31)
- “REPT-ALM-ENV: Report Alarm Environment” (6-72)
- “REPT EVT: Report event” (6-47)
- “RTRV-ALM: Retrieve alarm” (6-30)
- “RTRV-ALM-ENV: Retrieve alarm environment” (6-60)
- “RTRV-COND: Retrieve condition” (6-37)

**References**

GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: NE and Transport Surveillance Messages





## REPT EVT: Report event

---

REPT EVT messages are generated autonomously to report alarms of severity NA – Warning (ITU) / Not Alarmed (Telcordia). Also events like protection switches will be reported.

**Output format** The general format of a REPT EVT autonomous message is as follows:

```

sid date time
A atag REPT EVT modifier
  "aid:condtype,condeff,ocrdat,ocrtm,,,[thlev]
  [,tmper][:conddescr]"
  (1 or more lines of the above)
;
```

Note: The trailing comma has to be present if *thlev*, *tmper*, or both are used.

Since trailing commas to the left of a colon can be deleted, for non-TCA events, the output format is as follows:

```

sid date time
A atag REPT EVT modifier
  "aid:condtype,condeff,ocrdat,ocrtm[:conddescr]"
  (1 or more lines of the above)
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

#### Command parameters

1. atag – Automatic Tag  
Refer to the “REPT ALM: Report alarm” (6-44) message.
2. modifier – Message Modifier  
Refer to the definition of the *aidtype* parameter in the “RTRV-COND: Retrieve condition” (6-37) command.

3. aid – Access Identifier  
Refer to the definition of the *aid* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
4. condeff – Condition Effect  
This parameter indicates the effect of the reported event on the NE. It is used to distinguish between persistent and transient alarms/events.  
Two state transitions can be distinguished for a persistent alarm/event:
  - raise transition: state change from not present to present
  - clear transition: state change from present to not present.A transient alarm/event has no ‘presence’ state; i.e. just the occurrence of that event/alarm is reported. ABN condition are always persistent and not transient.  
Type: alphanumeric value set.  
Range:
  - CL: Standing condition cleared for a persistent alarm/event.
  - SC: Standing condition raised for a persistent alarm/event
  - TC: Transient condition occurred for a transient alarms/events.Default: There is no default value.
5. conddescr – Description of the Condition  
ASAP related conditions:  
For events which belong to an ASAP profile, refer to the definition of the *conddescr* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.  
TCA related conditions:  
Refer to the definition of the *conddescr* parameter in the Output parameters section of the “TCA notification” (9-19) chapter.  
Abnormal conditions:  
The general format is: category, description.  
Type: inner string.

## Range:

- Description for a protection group AID: - Abnormal condition, forced switch active - Abnormal condition, lockout active
- Description for a timing reference AID: - Abnormal condition, operate in hold-over - Abnormal condition, operate in free run mode
- Description for a port AID: - Abnormal condition, facility loopback active
- Description for a logical tributary AID: - Abnormal condition, cross-connect loopback active - Abnormal condition, test access session active
- Description for a system AID: - Abnormal condition, System operates in maintenance mode - Abnormal condition, Autonomous event forwarding is inhibited.

## Protection Switch related Conditions:

Refer to the definition of the **conddescr** parameter in the Output parameters section of the Protection group chapter.

## 6. condtype – Condition Type

## ASAP related conditions:

For events which belong to an ASAP profile, refer to the definition of the **condtype** parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.

## TCA related condition types:

Refer to the definition of the condtype parameter in the Output parameters section of the “TCA notification” (9-19) chapter.

## Abnormal condition types:

This parameter identifies the type of event indication being reported.

Type: inner string with the Format: ABN-<abntype>

## Range:

- ABN-INHSWPR: Inhibited switch to protection (forced switch to working or lockout protection)
- ABN-INHSWWKG: Inhibited switch to working (forced switch to protection or lockout working)
- ABN-SYNC : Holdover or Free-run synchronization mode
- ABN-LPBKNETWORK: Loopback, Network

- ABN-MAINTENANCE: System operates in maintenance mode
  - ABN-INHMSG: Autonomous event forwarding from NE to EMS is inhibited for all currently established sessions
  - ABN-TESTACC: Test access session has been setup.
- Protection Switch related Condition Types:  
Refer to the definition of the *condtype* parameter in the Output parameters section of the Protection group chapter.
7. ocrdat – Occurrence Date  
Refer to the definition of the *ocrdat* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
  8. ocrtm – Occurrence Time  
Refer to the definition of the *ocrtm* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
  9. thlev – Threshold Level  
This parameter is only used for Threshold Crossing Alerts (TCAs). It reports the threshold level value which is set by ED-TCA-PROF.  
The two applicable thresholding methods (tcamd) must be distinguished. For TR-only mode:
    - the raise TCA threshold value is reported.For TR-RTR mode:
    - the raise TCA threshold value is reported for the raise event
    - the reset TCA threshold value is reported for the clear event.Type: integer.  
Range: >1 (1 ... 4294967295). Leading zeros will be suppressed.
  10. tmper – Time Period  
This parameter reports the monitored time interval. This parameter is only used for Threshold Crossing Alerts (TCAs).  
Type: value set.  
Range: 15-MIN, 1-DAY.

**Detailed behavior  
description**

If an alarm is provisioned as NA – Warning (ITU) / Not Alarmed (Telcordia), then the occurrence of that alarm is reported in a REPT EVT message. REPT EVT messages also occur when any such standing alarm clears and is used to report transient conditions.

## REPT EVT: Report event

A standing condition is an alarm event that has a beginning and an end. When the event begins, the standing condition is declared via an autonomous message. When the event ends, an autonomous message is sent to indicate that the event cleared.

A transient condition only results in one autonomous message – a declaration that a specific transient condition occurred.

Autonomous performance monitoring (PM) threshold crossing alert (TCA) messages are provided to the OS using the REPT EVT TL1 message.

*LambdaUnite*<sup>®</sup> MSS supports two thresholding methods:

1. TR-only (also known as the implicit reset method). Then the TCA is a transient one – it is reported when the threshold is crossed. Because it is transient, there is no report when it clears (TC only).
2. TR-RTR (also known as the explicit reset method). Then the TCA has a standing condition, this means it has a beginning and an end (SC and CL).

The severity of a TCA is not provisionable. It is always NA – warning (ITU) / not alarmed (Telcordia) which implies TCA messages are always reported via REPT EVT.

Protection switching messages are provided to the OS using the REPT EVT TL1 message.

The REPT EVT message reports updates of the protection states.

Abnormal Condition messages are provided to the OS using the REPT EVT TL1 message.

The REPT EVT message reports updates of the abnormal condition states. The abnormal condition is always a standing condition, this means it has a beginning and an end ( SC and CL).

The severity of a ABN condition is not provisionable. It is always NA - warning (ITU) / not alarmed (Telcordia) which implies ABN messages are always reported via REPT EVT.

**Example input/output**

The following example shows an autonomous message REPT EVT for an LOS Alarm which has a severity NA assigned:

```
LT-UNITE-123 00-01-01 08:00:00  
A 003 REPT EVT 0C48
```

```
"1-1-#-#-3-1:AIS-L,SC,01-01,07-59-59:\\"Communication-  
Transport, 0C48 port, Alarm Indication Signal\\""
```

;

The following example shows an autonomous message REPT ALM for an LOS Alarm clear which has a severity NA assigned:

```
LT-UNITE-123 00-01-01 08:00:00  
A 003 REPT EVT 0C48  
"1-1-#-#-3-1:AIS-L,CL,01-01,07-59-59:\\"Communication-  
Transport, 0C48 port, Alarm Indication Signal-cleared\\""
```

;

Note: Examples for the other types of REPT EVT e.g. TCAs and protection switches are described in other sections which describes the specifics of the area to which the events belongs to (e.g. performance monitoring, protection switching).

### Related TL1 messages

- “ALW-MSG: Allow message” (5-33)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “INH-MSG: Inhibit message” (5-31)
- “REPT ALM: Report alarm” (6-44)
- “REPT-ALM-ENV: Report Alarm Environment” (6-72)
- “RTRV-ALM-ENV: Retrieve alarm environment” (6-60)
- “RTRV-COND: Retrieve condition” (6-37)

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: NE and Transport Surveillance Messages.



# Alarm log

## Overview

---

**Purpose** This section comprises messages to handle alarm logs.

**Contents**

|                                  |                      |
|----------------------------------|----------------------|
| RTRV-LOG-ALM: Retrieve log alarm | <a href="#">6-54</a> |
|----------------------------------|----------------------|

## RTRV-LOG-ALM: Retrieve log alarm

---

The RTRV-LOG-ALM command retrieves the alarm log.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax:  
RTRV-LOG-ALM:*tid*::*ctag*::[*startdate*],[*starttime*],[*replytype*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
3. *startdate* – Start Date  
The date for the starting point of the report. If both *startdate* and *starttime* are omitted, the entire log is retrieved. Both *startdate* and *starttime* must be specified, or both must be omitted.  
Type: value set of the format YY-MM-DD.  
Range: Y, M, D are digits. Leading zeros are not suppressed. YY represents the last two digits of the year, MM the month, DD the day.



## RTRV-LOG-ALM: Retrieve log alarm

4. **starttime** – Start Time  
 The time for the starting point of the report. If both **startdate** and **starttime** are omitted, the entire log is retrieved. Both **startdate** and **starttime** must be specified, or both must be omitted.  
 Type: value set of the format HH-MM-SS.  
 Range: H, M, S are digits. Leading zeros are not suppressed. HH represents the hours, MM the minutes, SS the seconds.
5. **replytype** – Type of Reply  
 This parameter defines the kind of log retrieving.  
 Type: alphanumeric value set.  
 Range: BROWSE User Browsing. If the requested **startdate** and **starttime** is in the log, those entries and any subsequent log entries are returned. If the requested **startdate** and **starttime** is NOT in the log, the first log entry in the log with a timestamp later than the **startdate** and **starttime** plus subsequent log entries will be returned.  
 DBSYNC Management system. If the requested **startdate** and **starttime** is in the log, those entries and any subsequent log entries are returned. If the requested **startdate** and **starttime** is NOT in the log, an SNVS error response is returned.  
 Default: BROWSE, if the parameter is omitted.

**Output format** Normal completion response of successful session termination

The following example shows the successful completion of the RTRV-LOG-ALM command by the NE:

```

sid date time
M ctag COMPLD
  "aid,aidtype:[ntfcncde],condtype,[srveff],
  ocrdat,ocrtm,[condeff][:conddescr]"
  ...
  "aid,aidtype:[ntfcncde],condtype,[srveff],
  ocrdat,ocrtm,[condeff][:conddescr]"
;
```

The output parameters **sid**, **date**, **time**, and **ctag** included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
Refer to the definition of the *aid* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
2. aidtype – Access Identifier Type  
Refer to the definition of the *aidtype* parameter in the “RTRV-COND: Retrieve condition” (6-37) command.
3. ntfncnclde – Notification Code  
This is the alarm severity (alarm level).  
Type: alphanumeric value set.  
Range:
  - CR - Critical (ITU / Telcordia)
  - MJ - Major (ITU / Telcordia)
  - MN - Minor (ITU / Telcordia)
  - SC - Standing condition – Warning (ITU) / not alarmed (Telcordia)
  - CL - ClearedThe abnormal condition is always a standing condition, this means it has a beginning and an end ( SC and CL). The severity of a abnormal condition is not provisionable. It is always NA - warning (ITU) / not alarmed (Telcordia) which implies ABN messages are always reported via REPT EVT.
4. condtype – Condition Type  
Refer to the definition of the *condtype* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.  
For ABN conditions see definition of *condtype* in the Output parameters section of “REPT EVT: Report event” (6-47).
5. srveff – Service Effect  
Refer to the definition of the *srveff* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.  
Abnormal condition event messages are always handled as NSA.

## RTRV-LOG-ALM: Retrieve log alarm

6. *ocrdat* – Occurrence Date  
Refer to the definition of the *ocrdat* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
7. *ocrtm* – Occurrence Time  
Refer to the definition of the *ocrtm* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
8. *conddescr* – Description of the Condition  
Refer to the definition of the *conddescr* parameter in the output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.  
For ABN conditions see definition of *conddescr* in the Output parameters section of “REPT EVT: Report event” (6-47).

**Detailed behavior description**

This log gives the user a history and time sequence of all of the most recent alarm detected by the system regarding equipment or facilities attached to the system.

TCAs are not stored within the alarm log.

The RTRV-LOG-ALM command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful completion of the RTRV-LOG-ALM command by the NE:

```
RTRV-LOG-ALM:LT-UNITE-123::123456::;
  LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
  "1-1-#-#-3-1,0C48:CR,LOS,SA,01-01,07-29-13:
  \"Communication-Transport, 0C48 port, LOS of Signal\"";
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-LOG-ALM command.

**Validation rule: no matching log entry**

There is at least one matching log entry for the specified *startdate* and *starttime* if replytype equals DBSYNC.

RTRV-LOG-ALM: Retrieve log alarm

**Error code:** SNVS - Status, Not in Valid State, no matching log entry

**Related TL1 messages**

- “RTRV-ALM: Retrieve alarm” (6-30)
- “RTRV-LOG-NTFCN: Retrieve notification Log” (5-58)

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: NE and Transport Surveillance Messages.



# MDI

## Overview

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**Purpose** This section presents information about the TL1 commands related to MDI.

**Contents**

|                                               |                      |
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| RTRV-ALM-ENV: Retrieve alarm environment      | <a href="#">6-60</a> |
| RTRV-ATTR-ENV: Retrieve attribute environment | <a href="#">6-64</a> |
| SET-ATTR-ENV: Set attribute environment       | <a href="#">6-68</a> |
| SET-ATTR-ENV notification                     | <a href="#">6-71</a> |
| REPT-ALM-ENV: Report Alarm Environment        | <a href="#">6-72</a> |



## RTRV-ALM-ENV: Retrieve alarm environment

---

The RTRV-ALM-ENV command retrieves active environmental alarms of the severity CR, MJ, MN (Critical, Major, or Minor (ITU/Telcordia)).

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): M1  
                      Priority: 1  
                      Abortable: Yes

**Input format**      Command Syntax: RTRV-ALM-ENV:*tid*:[*aid*]:*ctag*::[*ptfncnde*],[*almtype*];

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       See definition of “RTRV-HDR: Retrieve header” (5-8).
2.    *aid* – Access Identifier  
       This is the address of the MDI port entities for which an alarm condition or the configuration is being reported. If *misc\_inall* is specified the information for all entities will be retrieved.  
       Type: AID.  
       Range: Miscellaneous\_in\_discreteAID.  
       Default: *misc\_inall* (if the *aid* is omitted).
3.    *ctag* – Correlation Tag  
       See definition of “RTRV-HDR: Retrieve header” (5-8).
4.    *ntfncnde* – Notification Code  
       Refer to the *ntfncnde* parameter definition in the input parameters section of the “RTRV-ALM: Retrieve alarm” (6-30)
5.    *almtype* – Alarm Type  
       This parameter identifies the type of alarm indication being reported.  
       Type: alphanumeric value set.  
       Range: MISC (default), an event that applies to the miscellaneous discrete outputs inputs.

**Output format**      The following example shows the successful completion of the RTRV-ALM-ENV command by the NE:

## RTRV-ALM-ENV: Retrieve alarm environment

```

      sid date time
M   ctag COMPLD
      "aid:ntfncde,almttype,ocrdat,ocrtm[,almmsg]"
      (0 or more lines of the above)
;

```

If no alarms are raised only COMPLD will be returned. Applicable output lines are ordered by the value of occurrence date (ocrdat) and occurrence time (ocrtm), with the most recent alarm listed first.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Output parameters

#### Command parameters

1. aid – Access Identifier  
This is the address of the entity for which an alarm condition is being reported.  
Type: AID.  
Range: Miscellaneous\_in\_discreteAID. The AID misc\_inall must not appear.
2. almttype – Alarm Type  
Refer to the *almttype* parameter in the input parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60).
3. ntfncde – Notification Code  
Refer to the *ntfncde* parameter in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).
4. ocrdat – Occurrence Date  
See definition of *ocrdat* in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).

RTRV-ALM-ENV: Retrieve alarm environment

5. **ocrtm** – Occurrence Time  
See definition of **ocrtm** in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).
6. **almmsg** – Alarm Message  
A string describing the alarm of the environmental point.  
Note: This string is configurable by the SET-ATTR-ENV command.  
Type: text string.  
Range: upper and lower case, up to 32 characters.  
Default: Miscellaneous Discrete.

#### Detailed behavior description

Any environmental alarm reported by an autonomous REPT ALM ENV message, which is active when a RTRV-ALM-ENV message is received, is included in the RTRV-ALM-ENV response message.

Environmental alarms of severity NA (warning (ITU) / not alarmed (Telcordia) ) are not included in a RTRV-ALM-ENV response. They are included in the RTRV-COND response.

#### Example input/output

The following example shows the successful completion of the RTRV-ALM-ENV command by the NE:

```
RTRV-ALM-ENV:LT-UNITE-123::123456;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
    "MISC_IN7:MJ,MISC,01-01,07-49-23,\"Miscellaneous
    Discrete #7\"
    "MISC_IN5:MN,MISC,01-01,06-32-25,\"stairway 5
    temperature\"
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-ALM-ENV command.

#### Related TL1 messages

- “ALW-MSG: Allow message” (5-33)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “INH-MSG: Inhibit message” (5-31)
- “REPT ALM: Report alarm” (6-44)



RTRV-ALM-ENV: Retrieve alarm environment

- “REPT-ALM-ENV: Report Alarm Environment” (6-72)
- “REPT EVT: Report event” (6-47)
- “RTRV-ALM: Retrieve alarm” (6-30)
- “RTRV-COND: Retrieve condition” (6-37)
- “SET-ATTR-ENV: Set attribute environment” (6-68).

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: Network Element and Transport Surveillance Messages.



## RTRV-ATTR-ENV: Retrieve attribute environment

---

The RTRV-ATTR-ENV command is used to retrieve the alarm message, name and assigned ASAP of a miscellaneous discrete input (MDI/environmental point).

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): M1  
                      Priority: 1  
                      Abortable: Yes

**Input format**      Command Syntax: RTRV-ALM-ENV:*tid*:[*aid*]:*ctag*;

### Input parameters

#### Command parameters

- *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
- *aid* – Access Identifier  
Refer to the *aid* parameter in the input parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60).
- *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format**      The following example shows the successful completion of the RTRV-ATTR-ENV command by the NE:

```
sid date time
M ctag COMPLD
  "aid:,,envmsg,envname:pfname,envinv"
  (more lines for default AID)
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Output parameters****Command parameters**

1. aid – Access Identifier  
Refer to the *aid* parameter in the output parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60).
2. envinv – Environmental Alarm Inversion  
This parameter indicates for the MDI (environmental point) whether an alarm shall be generated if the port is on or if the port is off.  
Type: alphanumeric value set.  
Range:
  - YES: The alarm will be inverted
  - NO: The alarm will be not inverted.
3. envmsg – Environment Message  
This is the condition description which is associated with the MDI port (environmental point). This description will be sent with the alarm generated from the MDI port.  
Type: inner string.  
Range: a string up to 32 characters, any character except " and \, upper and lower cases are considered.  
Default: Miscellaneous Discrete #<N> with N = 1 .. 8 for the different MDI ports.
4. envname – Environmental Point Name  
This is the name associated to a MDI port (environmental point). It is a description which can be retrieved by the management system. It is not to be mixed up with the envmsg parameter. The envname is just a name of the MDI port and not reported via the condition description of an alarm.  
Type: inner string  
Range: a string up to 26 characters, any character except " and \, upper and lower cases considered.  
Default: MDI port #n; n is the number of the port 1 ... 8.
5. pfname – Profile Name  
This is the name of the ASAP that is assigned to the MDI port (environmental point). The ASAP must be of the type ENV.  
Type: alphanumeric character string. A hyphen ( - ) is additional allowed in the name.  
Range: string up to 24 characters.  
Default: DEFAULT.

RTRV-ATTR-ENV: Retrieve attribute environment

### Detailed behavior description

The RTRV-ATTR-ENV command does not generate a REPT DBCHG message.

### Example input/output

The following example shows the successful completion of the RTRV-ATTR-ENV command by the NE:

```
RTRV-ATTR-ENV:LT-UNITE-123:misc_in3:123456;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"MISC_IN3:,,\"smoke detected on detector 3\", \"smoke
detector 3\":ENV_CR,NO"
;
```

The following example shows the successful completion of the RTRV-ATTR-ENV command by the NE if all MDI's will be retrieved:

```
RTRV-ATTR-ENV:LT-UNITE-123:::123456;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"MISC_IN1:,,\"pump on\":ENV_NA,NO"
"MISC_IN2:,,\"smoke detected on detector 1\", \"smoke
detector 1\":ENV_CR,NO"
"MISC_IN3:,,\"smoke detected on detector 2\", \"smoke
detector 2\":ENV_CR,NO"
"MISC_IN4:,,\"smoke detected on detector 3\", \"smoke
detector 3\":ENV_CR,NO"
"MISC_IN5:,,\"smoke detected on detector 4\", \"smoke
detector 4\":ENV_CR,NO"
"MISC_IN6:,,\"fan on\", \"fan\":ENV_NA,YES"
"MISC_IN7:,,\"open door\", \"door\":DEFAULT,YES"
"MISC_IN8:,,\"open door\", \"door 2\":DEFAULT,YES"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-ATTR-ENV command.

### Related TL1 messages

- “REPT-ALM-ENV: Report Alarm Environment” (6-72)
- “RTRV-ALM-ENV: Retrieve alarm environment” (6-60)
- “SET-ATTR-ENV: Set attribute environment” (6-68).

MDI

*TL1 messages - fault management*

RTRV-ATTR-ENV: Retrieve attribute  
environment

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network  
Maintenance: Network Element and Transport Surveillance Messages.



## SET-ATTR-ENV: Set attribute environment

---

ET-ATTR-ENV: Set Attribute Environment The SET-ATTR-ENV command can be used to set the alarm message, name and assigned ASAP of an miscellaneous discrete input (MDI/environmental point).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: SET-ALM-ENV:*tid:aid:ctag::,almmsg,envname:spec\_block*;

### Input parameters

#### Command parameters

- tid – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
- aid – Access Identifier  
Refer to the *aid* parameter in the input parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60).
- ctag – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
- almmsg – Alarm Message  
Refer to the definition of the *envmsg* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).
- envname – Environmental Point Name  
Refer to the definition of the *envname* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).

#### Spec block parameters

- envinv – Environmental Alarm Inversion  
Refer to the definition of the *envinv* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).
- pfname – Profile Name  
Refer to the definition of the *pfname* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).

SET-ATTR-ENV: Set attribute environment

**Output format** The following example shows the successful completion of the SET-ATTR-ENV command by the NE:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The SET-ATTR-ENV command updates the configuration of the almmmsg, envname, pfname of the via aid specified MDI port. The changes will be reported via a REPT DBCHG message. See definition of SET-ATTR-ENV notification.

**Example input/output**

The following example shows the successful completion of the SET-ATTR-ENV command by the NE:

```
SET-ATTR-ENV:LT-UNITE-123:MISC_IN7:123456::,"open
door","door":pfname=ENV_NM,envinv=YES;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-ATTR-ENV command.

**Validation Rule: *pfname* does not exist**

An ASAP with the name pfname does not exist for an ASAP type ENV.

Error Code: IDNV - Input Data Not Valid, ASAP profile does not exist

**Related TL1 messages**

- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)
- “REPT-ALM-ENV: Report Alarm Environment” (6-72)

SET-ATTR-ENV: Set attribute environment

- “RTRV-ALM-ENV: Retrieve alarm environment” (6-60)
- “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: Network Element and Transport Surveillance Messages.





## SET-ATTR-ENV notification

---

**Output format** The SET-ATTR-ENV notification has the following specific syntax:

SET-ATTR-ENV:*aid*,,*almmsg*,*envname*:*spec\_block*;

### Output parameters

#### Command parameters

- *aid* – Access Identifier  
Refer to the *aid* parameter in the input parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60).
- *almmsg* – Alarm Message  
Refer to the definition of the *envmsg* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).
- *envname* – Environmental Point Name  
Refer to the definition of the *envname* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).

#### Spec block parameters

- *envinv* – Environmental Alarm Inversion  
Refer to the definition of the *envinv* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).
- *pfname* – Profile Name  
Refer to the definition of the *pfname* parameter in “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64).

**Example output** The example shows a normal notification after an SET-ATTR-ENV Command:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:SET-ATTR-ENV:MISC_
IN7::,,\"open door\", \"door\":pfname=ENV_NM,envinv=YES"
;
```



## REPT-ALM-ENV: Report Alarm Environment

---

The REPT ALM ENV autonomous messages report when environmental alarm of severity CR (critical), MJ (major), or MN (minor) either sets or clears.

**Output format** The general output format of the REPT ALM ENV message is defined as follows:

```
sid date time
almcde atag REPT ALM ENV
"aid:ntfcncde,almtype,ocrdat,ocrtm[,almmsg]"
(1 or more lines of the above)
;
```

### Output parameters

#### Command parameters

1. almcde – Alarm Code  
Refer to the “REPT ALM: Report alarm” (6-44) message.
2. atag – Automatic Tag  
Refer to the “REPT ALM: Report alarm” (6-44) message.
3. aid – Access Identifier  
Refer to the *aid* parameter in the output parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60) command.
4. almtype – Alarm Type  
Refer to the definition of the *almtype* parameter in the input parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60) command.
5. ocrdat – Occurrence Date  
See definition of *ocrdat* in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).
6. ocrtm – Occurrence Time  
See definition of *ocrtm* in the output parameters section of “RTRV-ALM: Retrieve alarm” (6-30).
7. almmsg – Alarm Message  
Refer to the definition of the *almmsg* parameter in the output parameters section of “RTRV-ALM-ENV: Retrieve alarm environment” (6-60).

REPT-ALM-ENV: Report Alarm  
Environment**Detailed behavior  
description**

REPT ALM ENV messages will be reported if on environmental points (MDI's) an alarm of severity CR (critical), MJ (major), or MN (minor) will be raised.

An alarm reported to the OS via the REPT ALM ENV message has a corresponding REPT ALM ENV clearance message that is generated when the alarm condition clears.

An environmental alarm of severity NA (warning (ITU) / not alarmed (telcordia) will be reported by REPT EVT.

**Example input/output**

The following example shows a REPT ALM ENV message if an environmental alarm appears:

```
LT-UNITE-123 00-01-01 08:00:00
*C 126 REPT ALM ENV
"MISC_IN7:CR,MISC,01-01,07-29-13,\"open door\"";
```

The following example shows a REPT ALM ENV message if an environmental alarm disappears:

```
LT-UNITE-123 00-01-01 08:00:00
A 127 REPT ALM ENV
"MISC_IN7:CL,MISC,01-01,07-29-13,\"open door\"";
```

**Related TL1 messages**

- “ALW-MSG: Allow message” (5-33)
- “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)
- “INH-MSG: Inhibit message” (5-31)
- “REPT ALM: Report alarm” (6-44)
- “REPT EVT: Report event” (6-47)
- “REPT SW: Report switch” (8-133)
- “RTRV-ALM: Retrieve alarm” (6-30)
- “RTRV-ALM-ENV: Retrieve alarm environment” (6-60)
- “RTRV-COND: Retrieve condition” (6-37)
- “SET-ATTR-ENV: Set attribute environment” (6-68)

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network  
Maintenance: Network Element and Transport Surveillance Messages.



# MDO

## Overview

---

**Purpose** This section presents information about the TL1 commands related to MDO.

### Contents

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## RTRV-ATTR-CONT: Retrieve attribute control

---

The RTRV-ATTR-CONT command can be initiated by users to retrieve the configuration associated with an miscellaneous output control (MDO port / external discrete control). The assigned descriptions are used for information purposes when a user seeks to operate or release external miscellaneous discrete controls.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-ATTR-CONT:*tid*:[*aid*]:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
 This is the address of the MDO port entities on which the command operates. If *misc\_outall* is specified the configuration of all MDO's will be retrieved.  
 Type: AID  
 Range: Miscellaneous\_out\_discreteAID  
 Default: *misc\_outall* (if the *aid* is omitted).
3. *ctag* – Correlation Tag  
 See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** The following example shows the successful completion of the RTRV-ATTR-CONT command by the NE:

```
sid date time
M ctag COMPLD
  "aid:contmsg,durmode,initcstat,[asgncond]"
  ...
  "aid:contmsg,durmode,initcstat,[asgncond]"
;
```

RTRV-ATTR-CONT: Retrieve attribute  
control

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid - Access Identifier  
This is the address of the MDO port entity for which the configuration is retrieved or on which an operation is performed.  
Type: AID.  
Range: Miscellaneous\_out\_discreteAID. misc\_outall must not be reported or used.
2. contmsg - Control Message  
This is the name associated to a MDO port (environmental control). It is a description which can be retrieved by the management system.  
Type: inner string.  
Range: string up to 26 characters, any character except " and \, upper and lower cases considered. A empty string is allowed. The value would be \".  
Default: MDO port #n. n is the number of the port 1 ... 8.
3. durmode - Duration Mode  
This parameter defines in which mode the device connected to the MDO is expected to be operated. It is a fixed value because this feature will be not supported by the system. This parameter is in for compatibility reason. The system operates only continuous that means if the MDO is operated it is switched on and it is released it is switched off.  
Type: alphanumeric value set.  
Range: CONTS, continuous duration.

RTRV-ATTR-CONT: Retrieve attribute control

4. **initcstat - Initial Control State**  
 This parameter defines the state the MDO must have in order to put the connected device in the "off"-state. For UNITE it is a fixed value because this feature will be not supported. This parameter is in for compatibility reason.  
 Type: alphanumeric value set.  
 Range: RLS, release.
5. **asgncond - Assigned Condition Type**  
 This parameter identifies the probable cause (type of alarm indication) which is assigned to an MDO port (external control). If one or more alarm(s) of this probable cause appears then the MDO port (external control) will be switched on.  
 Type: alphanumeric value set. Additionally a "-" will be allowed (not the first character).  
 Range: All defined probable causes and UNDEF: if no probable cause is assigned. For the value range of *asgncond* refer to "Alarm, event, ASAP tables" (6-96).  
 Default: UNDEF.

**Detailed behavior description**

The RTRV-ATTR-CONT command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful completion of the RTRV-ATTR-CONT command by the NE:

```
RTRV-ATTR-CONT:LT-UNITE-123:MISC_OUT3:123456;
  LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
  "MISC_OUT3:\"fan 3\",CONTS,RLS,FANF"
;
```

The following example shows the successful completion of the RTRV-ATTR-CONT command by the NE if the aid is omitted:

```
RTRV-ATTR-CONT:LT-UNITE-123::123456;
  LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
  "MISC_OUT2:\"sprinkler 2\",CONTS,RLS"
  "MISC_OUT3:\"fan 3\",CONTS,OPER,FANF"
;
```



RTRV-ATTR-CONT: Retrieve attribute control

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-ATTR-ENV command.

**Related TL1 messages**

- “OPR-EXT-CONT: Operate External Control” (6-90)
- “RLS-EXT-CONT: Release external control” (6-93)
- “RTRV-ALM: Retrieve alarm” (6-30)
- “RTRV-ACTL-CONT: Retrieve actual condition types” (6-80)

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: Network Element and Transport Surveillance Messages.



## RTRV-ACTL-CONT: Retrieve actual condition types

---

The RTRV-ACTL-CONT command can be initiated by users to retrieve the available condition types which can be assigned to an miscellaneous output control (MDO port / external discrete control).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-ACTL-CONT:*tid*::*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** The following example shows the successful completion of the RTRV-ACTL-CONT command by the NE:

```
sid date time
M ctag COMPLD
  "pftype:condtype:condinfo"
  ...
  "pftype:condtype;condinfo"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

RTRV-ACTL-CONT: Retrieve actual condition types

### Output parameters

#### Command parameters

1. pftype - Profile Type  
See definition of “RTRV-ASAP-PROF: Retrieve ASAP profile” (6-9).
2. condtype – Condition Type  
See definition of “RTRV-ALM: Retrieve alarm” (6-30).
3. condinfo - Information Of The Condition  
This is a textual description of the condition.  
Type: inner string of the format: \<category>, \<description>  
Range: category: is the category; description: is the alarm description, the string is up to 32 characters.  
For the values of category and description refer to “Alarm, event, ASAP tables” (6-96).

#### Detailed behavior description

The RTRV-ACTL-CONT command does not generate a REPT DBCHG message.

#### Example input/output

The following example shows the successful completion of the RTRV-ATCL-CONT command by the NE if the aid is omitted:

```
RTRV-ACTL-CONT:LT-UNITE-123::123456;
    LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
    "PORT:OCHLOF: \"Communication-Transport, 0Ch Loss of
    Frame\"
    "PORT:PREDCMLOS: \"Communication-Transport, Pre DCM
    Signal Loss\"
    ...
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-ATCL command.

#### Related TL1 messages

- “RTRV-ATTR-CONT: Retrieve attribute control” (6-76)
- “SET-ATTR-CONT: Set attribute control” (6-86)

RTRV-ACTL-CONT: Retrieve actual  
condition types

- “OPR-EXT-CONT: Operate External Control” (6-90)
- “RLS-EXT-CONT: Release external control” (6-93)
- “RTRV-ALM: Retrieve alarm” (6-30).



## RTRV-EXT-CONT: Retrieve external control

---

The RTRV-EXT-CONT command instructs an NE to send the control state of MDO ports (external controls). The command can be used to audit the result of an OPR-EXT-CONT or a RLS-EXT-CONT command.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
 Priority: 1  
 Abortable: Yes.

**Input format** Command Syntax: RTRV-EXT-CONT:*tid*:[*aid*]:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
Refer to the *aid* parameter in the Input parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76).
3. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** The following example shows the successful completion of the RTRV-EXT-CONT command by the NE:

```
sid date time
M ctag COMPLD
  "aid:,dur,contstate"
  ...
  "aid:,dur,contstate"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

RTRV-EXT-CONT: Retrieve external control

**Output parameters****Command parameters**

1. aid – Access Identifier  
Refer to the *aid* parameter in the output parameters section of “RTRV-ATTR-CONT: Retrieve attribute control” (6-76) command.
2. dur – Duration  
Refer to the *durmode* parameter in the output parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76) command.
3. contstate – Control State  
This is the state of the MDO (external control)  
Type: alphanumeric value set.  
Range:
  - OPER - Operated, that means the MDO is switched on
  - RLS - Released (default), that means the MDO is switched off.

**Detailed behavior description**

The RTRV-EXT-CONT command does not generate a REPT DBCHG message.

**Example input/output**

The following example shows the successful completion of the RTRV-EXT-CONT command by the NE:

```
RTRV-EXT-CONT:LT-UNITE-123:MISC_OUT3:123456;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"MISC_OUT3:,CONTS,RLS"
;
```

The following example shows the successful completion of the RTRV-EXT-CONT command by the NE if the aid is omitted:

```
RTRV-EXT-CONT:LT-UNITE-123::123456;
LT-UNITE-123 00-01-01 08:00:00
M 123456 COMPLD
"MISC_OUT1:,CONTS,RLS"
"MISC_OUT2:,CONTS,OPER"
"MISC_OUT3:,CONTS,OPER"
"MISC_OUT4:,CONTS,RLS"
```

RTRV-EXT-CONT: Retrieve external control

```
"MISC_OUT5: ,CONTS,RLS"  
"MISC_OUT6: ,CONTS,OPER"  
"MISC_OUT7: ,CONTS,RLS"  
"MISC_OUT8: ,CONTS,RLS"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-EXT-CONT command.

**Related TL1 messages**

- “OPR-EXT-CONT: Operate External Control” (6-90)
- “RLS-EXT-CONT: Release external control” (6-93).

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: Network Element and Transport Surveillance Messages.



## SET-ATTR-CONT: Set attribute control

---

The SET-ATTR-CONT command can be initiated by users to set the description associated with an MDO port (Miscellaneous Discrete Output / external discrete control).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: SET-ATTR-CONT:*tid:aid:ctag::contmsg[,asncond]*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
Refer to the *aid* parameter in the Input parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76).
3. ctag – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
4. contmsg – Control Message  
This is the name associated to a MDO port (environmental control).  
Type: text string  
Range: A string of up to 26 characters, any character except “ and \, upper and lower cases considered. An empty string is allowed. The value would be “”.
5. asncond – Assigned Condition Type  
Refer to the *asncond* parameter in the output parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76) command. If the value is omitted, then the actual value shall not be changed.

**Output format** The following example shows the successful completion of the SET-ATTR-CONT command by the NE:

```
sid date time
```



## SET-ATTR-CONT: Set attribute control

```
M  ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The name of a MDO via the aid specified will be updated according to the value of *contmsg*. The update will be reported via a SET-ATTR-CONT - REPT DBCHG message. Refer to the definition of the SET-ATTR-CONT notification.

**Example input/output**

The following example shows the successful completion of the SET-ATTR-CONT command by the NE:

```
SET-ATTR-CONT:LT-UNITE-123:MISC_OUT3:123456:,"fan
  3",,FANF;
  LT-UNITE-123 00-01-01 08:00:00
M  123456 COMPLD
;
```

The following example shows the successful completion of the SET-ATTR-CONT command by the NE if the *asgncond* parameter will be unchanged:

```
SET-ATTR-CONT:LT-UNITE-123:MISC_OUT3:123456:,"fan 3";
  LT-UNITE-123 00-01-01 08:00:00
M  123456 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the SET-ATTR-CONT command.

**Related TL1 messages**

- “RTRV-ACTL-CONT: Retrieve actual condition types” (6-80)
- “RTRV-ATTR-CONT: Retrieve attribute control” (6-76)
- “OPR-EXT-CONT: Operate External Control” (6-90)
- “RLS-EXT-CONT: Release external control” (6-93).

SET-ATTR-CONT: Set attribute control

**References** GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: Network Element and Transport Surveillance Messages.



## SET-ATTR-CONT notification

---

**Output format** See definition of “REPT DBCHG: Report data base change” (5-62).  
The SET-ATTR-CONT notification has the following specific syntax:  
SET-ATTR-CONT:*aid::contmsg,,asgncond*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
Refer to the *aid* parameter in the output parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76).
2. *contmsg* – Control Message  
Refer to the *contmsg* parameter in the output parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76).
3. *asgncond* – Assigned Condition Type  
Refer to the *asgncond* parameter in the output parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76) command.

**Example output** The example shows a normal SET-ATTR-CONT notification:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:SET-ATTR-CONT:MISC_
OUT3::\"fan 3\",,FANF"
;
```



## OPR-EXT-CONT: Operate External Control

---

The OPR-EXT-CONT operates a MDO port (Miscellaneous Discrete Output / external discrete control), i.e. switches on the MDO port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: OPR-EXT-CONT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
Refer to the *aid* parameter in the Input parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76).
3. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** The following example shows the successful completion of the OPR-EXT-CONT command by the NE:

```
sid date time
M ctag COMPLD
;
```

If the OPR-EXT-CONT command does not alter the existing attributes, i.e., the control referenced by the *aid* is already operated, the NE will not deny the command. The system will respond with the completion message shown above.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## OPR-EXT-CONT: Operate External Control

**Detailed behavior description**

If no probable cause is assigned to the MDO port the command changes the state of the MDO specified via aid to "switched on", i.e. the MDO port will be activated.

The update will be reported via a OPR-EXT-CONT - REPT DBCHG message. Refer to the definition of the OPR-EXT-CONT notification.

**Example input/output**

The following example shows the successful completion of the OPR-EXT-CONT command by the NE:

```
OPR-EXT-CONT:LT-UNITE-123:MISC_OUT3:123456;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the "RTRV-HDR: Retrieve header" (5-8) command error responses section. The error responses listed there also apply to the OPR-EXT-CONT command.

**Validation: probable cause assigned to MDO port**

A probable cause is assigned to the MDO port. This command will be not performed.

Error Code: SDNC - Status, Data Not Consistent, asgncond not empty

**Related TL1 messages**

- "RTRV-ATTR-CONT: Retrieve attribute control" (6-76)
- "SET-ATTR-CONT: Set attribute control" (6-86)
- "RLS-EXT-CONT: Release external control" (6-93).

**References**

GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: Network Element and Transport Surveillance Messages.



## OPR-EXT-CONT notification

---

**Output format** The OPR-EXT-CONT notification has the following specific syntax:

OPR-EXT-CONT:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
Refer to the *aid* parameter in the output parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76).

**Example output** The example shows a normal OPR-EXT-CONT notification:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:OPR-EXT-CONT:MISC_OUT3"
;
```



## RLS-EXT-CONT: Release external control

---

The RLS-EXT-CONT releases a MDO port (Miscellaneous Discrete Output / external discrete control), i.e. switches off the MDO port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: RLS-EXT-CONT:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
Refer to the *aid* parameter in the Input parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76).
3. *ctag* – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).

**Output format** The following example shows the successful completion of the RLS-EXT-CONT command by the NE:

```
sid date time
M ctag COMPLD
;
```

If the RLS-EXT-CONT command does not alter the existing attributes, i.e., the control referenced by the *aid* is already released, the NE will not deny the command. The system will respond with the completion message shown above.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the output parameter section of “RTRV-HDR: Retrieve header” (5-8).

RLS-EXT-CONT: Release external control

**Detailed behavior description**

If no probable cause is assigned to the MDO port the command changes the state of the MDO specified via aid to "switched off", i.e. the MDO port will be deactivated.

The update will be reported via a RLS-EXT-CONT - REPT DBCHG message. Refer to the definition of the RLS-EXT-CONT notification.

**Example input/output**

The following example shows the successful completion of the RLS-EXT-CONT command by the NE:

```
RLS-EXT-CONT:LT-UNITE-123:MISC_OUT3:123456;  
    LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the "RTRV-HDR: Retrieve header" (5-8) command error responses section. The error responses listed there also apply to the RLS-EXT-CONT command.

**Validation: probable cause assigned to MDO port**

A probable cause is assigned to the MDO port. This command will be not performed.

Error Code: SDNC - Status, Data Not Consistent, asgncond not empty

**Related TL1 messages**

- "RTRV-ATTR-CONT: Retrieve attribute control" (6-76)
- "SET-ATTR-CONT: Set attribute control" (6-86)
- "RLS-EXT-CONT: Release external control" (6-93)

**References**

GR-833-CORE, Issue 4, June 2000, OTGR Section 12.3, Network Maintenance: Network Element and Transport Surveillance Messages.





## RLS-EXT-CONT notification

---

**Output format** The RLS-EXT-CONT notification has the following specific syntax:

RLS-EXT-CONT:*aid*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
Refer to the *aid* parameter in the output parameters section of the “RTRV-ATTR-CONT: Retrieve attribute control” (6-76) command.

**Example output** The example shows a normal RLS-EXT-CONT notification:

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:RLS-EXT-CONT:MISC_OUT3"
;
```



# Alarm, event, ASAP tables

## Overview

---

**Purpose** This section describes which alarms and events in the system can occur.

For each possible alarm following will be described:

### **condtype**

The *condtype*, it represents the probable cause.

### **sa/nsa**

States if it is service affecting (sa) or/and non service affecting (nsa).

### **conddescr**

The *conddescr* related to the alarm. It is of the format:

1. \"<category>, <entity>, <description>, <additional text>\"
2. \"<category>, <entity>, <description>, <additional text>-cleared\".

If there is no additional text, then the trailing comma may be omitted.

The *conddescr* has two forms for persistent alarms:

1. It is used when the alarm is raised.
2. The string: "-cleared" is appended. It is used when the alarm will be cleared. Transient alarms uses only the first form.

The description in the tables below defines the text for each part of the *conddescr*. The leading and ending ' \" ' are omitted.

### **ASAP Parameter**

The ASAP parameter which are used in the RTRV-ASAP-PROF, ED-ASAP-PROF, ENT-ASAP-PROF commands for the specific ASAP type.

The name of service affected related ASAP parameters starts with the prefix "sa\_", for non service affected one with "nsa\_". The prefix can be omitted if the one probable cause reports only for service affected or non service affected.

### **default severity**

The default alarm severity which is assigned to the ASAP parameter.

## Description

A description for explanation.

## modifier/aidtype

The to the alarm related *modifier* and *aidtype*.

## AID

The AIDs which can be reported related to the alarms. All wildcard aids like all must not be used.

## Alarm duration

It describes if the alarm is a persistent one or a transient one.

There are separate ASAP parameter for sa and nsa alarms. There applicable each parameter will be described separately together with their default values.

The Alarms will be described per ASAP type.

Please refer also to other fragments of the TL1 documentation where REPT EVT messages related to this fragment will be defined.

Remark to TCA: The alarm level of threshold crossing alarms (TCA) shall always be “not alarmed”, and it is not user provisionable. The system shall not allow the user to change any attribute of TCA alarm through ASA profile. All the attributes, such as TCA reporting enable/disable, that will affect TCA reporting shall be handled by the TCA profile.

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## ASAP Type DCN

---

**Properties of all alarms**    modifier/aidtype: COM  
AID: SystemAID  
Alarm duration: persistent.

**condtype: PARARREP**    sa/nsa: nsa  
conddescr: Communication-DCN, DCN, Partitioned Area Repair  
ASAP parameter: *pararrep* default severity: MN.

**condtype: PROVINVAL**    sa/nsa: nsa  
conddescr: Communication-DCN, DCN, DCN Provisioning Not Valid  
ASAP parameter: *provinval* default severity: MJ.

**condtype: ADDROV**    sa/nsa: nsa  
conddescr: Communication-DCN, DCN, Address List Overflow  
ASAP parameter: *addrov* default severity: MJ.

**condtype: ASTNNBRNAV**    sa/nsa: nsa  
conddescr: Communication-DCN, DCN, ASTN Neighbor Not Available  
ASAP parameter: *astnnbrnav* default severity: MJ.  
The alarm information shall also include the IP address of the affected ASTN neighbor, which has to be mapped into the *conddescr*.

□

## ASAP Type ENET

---

**Properties of all alarms** Alarm duration: persistent

**condtype: VCGLOA** sa/nsa: sa / nsa  
conddescr: Communication-Transport, VCG, Loss of Alignment  
ASAP parameter: sa\_vcg\_loa (service affecting) default severity: CR  
ASAP parameter: nsa\_vcg\_loa (non service affecting) default severity: MN  
modifier/aidtype: VCG  
AID: VCGAID.

**condtype: VCGLOPC** sa/nsa: sa / nsa  
conddescr: Communication-Transport, VCG, Partial Transport Capacity Loss  
ASAP parameter: sa\_vcg\_lopc (service affecting) default severity: MJ  
ASAP parameter: nsa\_vcg\_lopc (non service affecting) default severity: MN  
modifier/aidtype: VCG  
AID: VCGAID.

**condtype: VCGLOTC** sa/nsa: sa / nsa  
conddescr: Communication-Transport, VCG, Total Transport Capacity Loss  
ASAP parameter: sa\_vcg\_lotc (service affecting) default severity: CR  
ASAP parameter: nsa\_vcg\_lotc (non service affecting) default severity: MN  
modifier/aidtype: VCG  
AID: VCGAID.

**condtype: VCGFOPT** sa/nsa: sa / nsa  
conddescr: Communication-Transport, VCG, Source End Failure of Protocol  
ASAP parameter: sa\_vcg\_fopt (service affecting) default severity: MJ

ASAP parameter: nsa\_vcg\_fopt (non service affecting) default  
severity: MN

modifier/aidtype: VCG

AID: VCGAID.

**condtype: VCGFOPR**

sa/nsa: sa / nsa

conddescr: Communication-Transport, VCG, Sink End Failure of  
Protocol

ASAP parameter: sa\_vcg\_fopr (service affecting) default severity: MJ

ASAP parameter: nsa\_vcg\_fopr (non service affecting) default  
severity: MN

modifier/aidtype: VCG

AID: VCGAID.

**condtype: VCGSSF**

sa/nsa: sa / nsa

conddescr: Communication-Transport, VCG, Server Signal Fail

ASAP parameter: sa\_vcg\_ssf default severity: NR

ASAP parameter: nsa\_vcg\_ssf default severity: NR

modifier/aidtype: VCG

AID: VCGAID.

**condtype: GFPLOF**

sa/nsa: sa / nsa

conddescr: Communication-Transport, VCG, GFP Loss of Frame

ASAP parameter: sa\_gfp\_lof default severity: CR

ASAP parameter: nsa\_gfp\_lof default severity: MN

modifier/aidtype: VCG

AID: VCGAID.

**condtype: LANLOS**

sa/nsa: sa / nsa

conddescr: Communication-Transport, 1GE, LAN Loss of Signal

ASAP parameter: sa\_lan\_los default severity: CR

ASAP parameter: nsa\_lan\_los default severity: MN

modifier/aidtype: 1GE

AID: EPortAID.

**condtype: LANANM**

sa/nsa: sa / nsa

conddescr: Communication-Transport, 1GE, LAN Auto Negotiation  
Mismatch

ASAP parameter: sa\_lan\_anm, default severity: MN

ASAP parameter: nsa\_lan\_anm, default severity: NA

modifier/aidtype: 1GE

AID: EPortAID.

**condtype: MACVLANOVFW**

sa/nsa: sa / nsa

conddescr: Communication-Transport, 1GE, max no of VLAN  
instances reached

ASAP parameter: nsa\_vlan\_maxno, default severity: MN

modifier/aidtype: 1GE

AID: EPortAID.

Per Gigabit Ethernet card one virtual switch is available, therefore the alarm is always raised against the first port of the card. Also the alarm configuration is related to the first port.





## ASAP Type ENV

---

**Properties of all alarms**

modifier/aidtype: ENV

AID: Miscellaneous\_in\_DiscreteAID

Alarm duration: persistent.

**Reference ASAP Type ENV**

Refer to the *envmsg* parameter in the output parameters section of the “RTRV-ATTR-ENV: Retrieve attribute environment” (6-64) command for string values as part of *conddescr*.

**condtype: MISC\_1**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_1

Default severity: NR

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.

**condtype: MISC\_2**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_2

Default severity: NA

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.

**condtype: MISC\_3**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_3

Default severity: NR

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.

**condtype: MISC\_4**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_4

Default severity: NR

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.

**condtype: MISC\_5**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_5

Default severity: NR

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.

**condtype: MISC\_6**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_6

Default severity: NR

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.

**condtype: MISC\_7**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_7

Default severity: NR

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.

**condtype: MISC\_8**

sa/nsa: none

conddescr: {envmsg}

ASAP parameter: environ\_8

Default severity: NR

Alarm of MDI (Miscellaneous Discrete Input / environmental point ).  
The description can be assigned.



## ASAP Type EQUIP-PROT

---

**Properties of all alarms**      modifier/aidtype: EQPT

Alarm duration: persistent

**Reference ASAP Type  
EQUIP-PROT**

Refer to the *nvmname* parameter in the output parameters section of the “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89) command for values of *cpname* as part of *conddescr*.

Refer to the *nvmqual* parameter in the output parameters section of the “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89) command for values of *cpqual* as part of *conddescr*.

**condtype: EQPT**

sa/nsa: sa / nsa

conddescr: Equipment, {cpname}/{cpqual}, Circuit Pack Clock Failure

ASAP parameter: sa\_eqpt; default severity: CR

ASAP parameter: nsa\_eqpt; default severity: MN

AID: CpAID.

**condtype: CPTMP**

sa/nsa: sa / nsa

conddescr: Equipment, {cpname}/{cpqual}, Unit Temperature too High

ASAP parameter: sa\_cptemp; default severity: MJ

ASAP parameter: nsa\_cptemp; default severity: MN

AID: CpAID.

**condtype: PRCDRERR**

sa/nsa: sa / nsa

conddescr: Equipment, slot, Circuit Pack Type Mismatch

ASAP parameter: sa\_pcdrerr; default severity: MJ

ASAP parameter: nsa\_pcdrerr; default severity: MN

AID: SlotAID.

**condtype: REPLUNITMISS**

sa/nsa: sa / nsa

conddescr: Equipment, slot, Circuit Pack not Present

ASAP parameter: sa\_replunitmiss; default severity: CR

ASAP parameter: nsa\_replunitmiss; default severity: MN

AID: SlotAID.

**condtype: TXInF**

sa/nsa: sa / nsa

conddescr: Equipment, {cpname}/{cpqual}, TXI Failure

ASAP parameter: sa\_txif; default severity: CR

ASAP parameter: nsa\_txif; default severity: MN

AID: CpAID.

Description: The n in the condtype expresses the individual TXI line for which the alarm is reported. The maximum of n depends on the card type. The condtype will be reported as: TXI1F, TXI2F.

**condtype: CPFAIL**

sa/nsa: sa / nsa

conddescr: Equipment, {cpname}/{cpqual}, Circuit Pack Failure

ASAP parameter: sa\_cpfail; default severity: CR

ASAP parameter: nsa\_cpfail; default severity: MN

AID: CpAID.

**condtype: PIMISS**

sa/nsa: sa / nsa

conddescr: Equipment, shelf, Power Interface not Present

ASAP parameter: sa\_pimiss; default severity: MJ

ASAP parameter: nsa\_pimiss; default severity: MN

AID: PowerAID.

**condtype: PIEF**

sa/nsa: nsa

conddescr: Equipment, shelf, Power Interface Read Failure

ASAP parameter: pief; default severity: MN

AID: PowerAID.

**condtype: POWF**

sa/nsa: sa / nsa

conddescr: Equipment, shelf, System Power Failure

ASAP parameter: sa\_powf; default severity: MJ

ASAP parameter: nsa\_powf; default severity: MN

AID: PowerAID.

**condtype: ONIFW**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, ONI Failure on working CTL slot

ASAP parameter: sa\_onifw; default severity: MN

AID: CpAID.

**condtype: ONIFP**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, ONI Failure on protecting CTL slot

ASAP parameter: nsa\_onifp; default severity: MN

AID: CpAID.

**condtype: DCTLUNAVAIL**

sa/nsa: nsa

conddescr: Equipment, SYSTEM, Duplex Control not Present

ASAP parameter: nsa\_dctlunavail; default severity: NR

AID: SystemAID.

**condtype: BKUPMEMP**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, IDE Flash Card Access Fail

ASAP parameter: nsa\_bkupmemp default severity: MJ

AID: CpAID

**condtype: OMMISMA**

sa/nsa: sa/nsa

conddescr: Equipment, Socket, Optical Module Type Mismatch

ASAP parameter: sa\_ommisma default severity: CR

ASAP parameter: nsa\_ommisma default severity: MN

AID: SocketAID.

**condtype: OMMISS**

sa/nsa: sa/nsa

conddescr: Equipment, Socket, Optical Module not Present

ASAP parameter: sa\_ommiss default severity: CR

ASAP parameter: nsa\_ommiss default severity: MN

AID: SocketAID.

**condtype: OMFAIL**

sa/nsa: sa/nsa

conddescr: Equipment, Socket, Optical Module Fail

ASAP parameter: sa\_omfail default severity: CR

ASAP parameter: nsa\_omfail default severity: MN

AID: SocketAID.

**condtype: OMUNSUP**

sa/nsa: sa/nsa

conddescr: Equipment, Socket, Optical Module not supported

ASAP parameter: sa\_omunsup default severity: CR

ASAP parameter: nsa\_omunsup default severity: MN

AID: SocketAID.



## ASAP Type EQUIP-UNPROT

---

**Properties of all alarms**      modifier/aidtype: EQPT

Alarm duration: persistent

**Reference ASAP Type  
EQUIP-UNPROT**

Refer to the *nvmname* parameter in the output parameters section of the “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89) command for values of *cpname* as part of *conddescr*.

Refer to the *nvmqual* parameter in the output parameters section of the “RTRV-EQPT (slot): Retrieve Equipment (slot)” (5-89) command for values of *cpqual* as part of *conddescr*.

**condtype: CSDWF**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, Worker Clock Input Fail

ASAP parameter: nsa\_csdwf; default severity: MN

AID: CpAID.

**condtype: CSDPF**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, Protection Clock Input Fail

ASAP parameter: nsa\_csdpf; default severity: MN

AID: CpAID.

**condtype: SYNCCLK**

sa/nsa: sa

conddescr: Equipment, system, NE Clock Failure

ASAP parameter: sa\_syncclk; default severity: CR

AID: SystemAID.

**condtype: CPDEGR**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, Unit Cooling Degraded

ASAP parameter: nsa\_cpdegr; default severity: MN

AID: CpAID.

**condtype: CPCOMF**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, Circuit Pack Comm Failure

ASAP parameter: nsa\_cpcomf; default severity: MN

AID: CpAID.

**condtype: BPEF**

sa/nsa: sa

conddescr: Equipment, shelf, Backplane Read Failure

ASAP parameter: sa\_bpef; default severity: MJ

AID: ShelfAID.

**condtype: SYSCOMF**

sa/nsa: sa

conddescr: Equipment, {cpname}/{cpqual}, Comm Channel Failure

ASAP parameter: sa\_syscomf default; severity: MJ

AID: CpAID.

**condtype: CTLCOMF**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, CTL Comm Failure

ASAP parameter: nsa\_ctlcomf; default severity: MN

AID: CpAID.

**condtype: BKUPMEMO**

sa/nsa: nsa

conddescr: Processing Error, {cpname}/{cpqual}, NVM Shortage

ASAP parameter: nsa\_bkupmemo; default severity: MN

AID: CpAID.

**condtype: CIPWRDWN**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, CICTL Powered Down

ASAP parameter: nsa\_cipwrdsn; default severity: MN

AID: CpAID.

**condtype: TIMM**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, TI Mismatch

ASAP parameter: nsa\_timm; default severity: MN



AID: CpAID.

**condtype: TIMISS**

sa/nsa: nsa

conddescr: Equipment, {cpname}/{cpqual}, TI not Present

ASAP parameter: nsa\_timiss default severity: MN

AID: TimingInterfaceAID.

**condtype: CIMISS**

sa/nsa: nsa

conddescr: Equipment, shelf, CICTL not Present

ASAP parameter: nsa\_cimiss; default severity: MN

AID: ShelfAID.

**condtype: CIF**

sa/nsa: nsa

conddescr: Equipment, ci-ctl, CICTL Failure

ASAP parameter: nsa\_cif; default severity: MN

AID: CiCtlAID.

**condtype: CICOMF**

sa/nsa: nsa

conddescr: Equipment, ci-ctl, CICTL Comm Failure

ASAP parameter: nsa\_cicomf; default severity: MN

AID: CiCtlAID.

**condtype: FANUNITMISS**

sa/nsa: sa

conddescr: Equipment, shelf, Fan Unit not Present

ASAP parameter: sa\_fanunitmiss; default severity: CR

AID: ShelfAID.

**condtype: FANUNITCOMF**

sa/nsa: nsa

conddescr: Equipment, fan, Fan Unit Comm Failure

ASAP parameter: nsa\_fanunitcomf; default severity: MN

AID: FanAID.

|                           |                                                                                                                                                    |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>condtype: FANUNITF</b> | sa/nsa: sa<br>conddescr: Equipment, fan, Fan Unit Failure<br>ASAP parameter: sa_fanunitf default severity: CR<br>AID: FanAID.                      |
| <b>condtype: FANF</b>     | sa/nsa: sa<br>conddescr: Equipment, fan, Fan Failure<br>ASAP parameter: sa_fanf; default severity: MJ<br>AID: FanAID.                              |
| <b>condtype: FEEDAF</b>   | sa/nsa: nsa<br>conddescr: Equipment, fan, Fan Voltage Feed A Failure<br>ASAP parameter: nsa_feedaf; default severity: MN<br>AID: FanAID.           |
| <b>condtype: FEEDBF</b>   | sa/nsa: nsa<br>conddescr: Equipment, fan, Fan Voltage Feed B Failure<br>ASAP parameter: nsa_feedbf; default severity: MN<br>AID: FanAID.           |
| <b>condtype: UPMISS</b>   | sa/nsa: nsa<br>conddescr: Equipment, shelf, User Panel not Present<br>ASAP parameter: nsa_upmiss; default severity: MN<br>AID: ShelfAID.           |
| <b>condtype: UPCOMF</b>   | sa/nsa: nsa<br>conddescr: Equipment, user panel, User Panel Comm Failure<br>ASAP parameter: nsa_upcomf; default severity: MN<br>AID: UserPanelAID. |
| <b>condtype: ECIMISMA</b> | sa/nsa: nsa<br>conddescr: Equipment, ECI, ECI Mismatch Failure<br>ASAP parameter: sa_ecimisma; default severity: CR                                |

AID: EciAID.

**condtype: ECICOMF**

sa/nsa: nsa

conddescr: Equipment, ECI, ECI Comm Failure

ASAP parameter: nsa\_ecicomf; default severity: MN

AID: EciAID.

**condtype: ECIMISS**

sa/nsa: sa

conddescr: Equipment, ECI, ECI not Present

ASAP parameter: sa\_ecimiss; default severity: CR

AID: EciAID.



## ASAP Type MSSPRING-BLSR

---

|                                 |                                                                                                                                                                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Properties of all alarms</b> | modifier/aidtype: OC48, OC192, OC768, STM16, STM64, STM256.<br>Alarm duration: persistent.                                                                                                                                           |
| <b>condtype: APSC</b>           | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group, Inconsistent APS Codes<br><br>ASAP parameter: inaps; default severity: MJ<br><br>AID: SPortAID (2F: west/east port, 4F: west/east protection port). |
| <b>condtype: IMAPS</b>          | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group, Improper APS Codes<br><br>ASAP parameter: imaps; default severity: MJ<br><br>AID: SPortAID (2F: west/east port, 4F: west/east protection port).     |
| <b>condtype: NID-CONFL</b>      | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group, Node ID Mismatch<br><br>ASAP parameter: nid_confl; default severity: MJ<br><br>AID: SPortAID (2F: west/east port, 4F: west/east protection port).   |
| <b>condtype: DKB</b>            | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group, Default K-bytes<br><br>ASAP parameter: dkb; default severity: MJ<br><br>AID: SPortAID (2F: west/east port, 4F: west/east protection port).          |
| <b>condtype: RNG-PSS</b>        | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group, Ring protection switch Suspended<br><br>ASAP parameter: rng_pss; default severity: MJ<br><br>AID: TwoFibre_ProtGrpAID, FourFibre_ProtGrpAID.        |

|                              |                                                                                                                                                                                                                                |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>condtype: TS</b>          | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group,<br>Traffic Squelched<br><br>ASAP parameter: ts; default severity: MJ<br><br>AID: SPortAID (2F: west/east port, 4F: west/east worker port).    |
| <b>condtype: DUPL-RNG</b>    | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group,<br>Duplicate Ring Node<br><br>ASAP parameter: dupl_rng; default severity: MJ<br><br>AID: TwoFibre_ProtGrpAID, FourFibre_ProtGrpAID.           |
| <b>condtype: RNG-OPEN</b>    | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group,<br>Open Ring<br><br>ASAP parameter: ropn; default severity: MJ<br><br>AID: TwoFibre_ProtGrpAID, FourFibre_ProtGrpAID.                         |
| <b>condtype: SQMAP-CONFL</b> | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group,<br>Local Squelch Map Conflict<br><br>ASAP parameter: sqmap_confl; default severity: MN<br><br>AID: TwoFibre_ProtGrpAID, FourFibre_ProtGrpAID. |
| <b>condtype: RNG-INC</b>     | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group,<br>Ring Incomplete<br><br>ASAP parameter: rng_inc; default severity: MJ<br><br>AID: TwoFibre_ProtGrpAID, FourFibre_ProtGrpAID.                |
| <b>condtype: RNG-URT</b>     | sa/nsa: nsa<br><br>conddescr: Communication-Transport, MSSPRING-BLSR prot group,<br>Unknown Ring Type<br><br>ASAP parameter: rng_urt; default severity: NA                                                                     |

AID: TwoFibre\_ProtGrpAID, FourFibre\_ProtGrpAID.

**condtype: RNG-IRPM**

sa/nsa: nsa

conddescr: Communication-Transport, MSSPRING-BLSR prot group,  
Inconsistent Ring Protection Mode

ASAP parameter: rng\_irpm; default severity: MJ

AID: TwoFibre\_ProtGrpAID, FourFibre\_ProtGrpAID.

**condtype: RNG-DSCVY**

sa/nsa: nsa

conddescr: Communication-Transport, MSSPRING-BLSR prot group,  
Ring Discovery in Progress

ASAP parameter: rng\_dscvy; default severity: NA

AID: TwoFibre\_ProtGrpAID, FourFibre\_ProtGrpAID.

**condtype: ET-PREEMPT**

sa/nsa: nsa

conddescr: Communication-Transport, MSSPRING-BLSR prot group,  
Extra Traffic Preempted

ASAP parameter: et\_preempt; default severity: NA

AID: SPortAID (2F: west/east port, 4F: west/east protection port).



## ASAP Type MSP-APS

---

|                                 |                                                                                                                                                                |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Properties of all alarms</b> | modifier/aidtype: OC3, OC12, OC48, OC192, OC768, STM1, STM4, STM16, STM64, STM256<br>AID: OnePlusOne_PrtGrpAID<br>Alarm duration: persistent.                  |
| <b>condtype: PAMARCH</b>        | sa/nsa: nsa<br>conddescr: Communication-Transport, 1+1 MSP-APS prot group, Prot. Arch. Mismatch<br>ASAP parameter: pamarch; default severity: MJ.              |
| <b>condtype: PAMOPER</b>        | sa/nsa: nsa<br>conddescr: Communication-Transport, 1+1 MSP-APS prot group, Prot. Arch. Operation Mismatch<br>ASAP parameter: pamoper; default severity: MJ.    |
| <b>condtype: PAMMODE</b>        | sa/nsa: nsa<br>conddescr: Communication-Transport, 1+1 MSP-APS prot group, Prot. Arch. Mode Mismatch<br>ASAP parameter: pammode; default severity: MJ.         |
| <b>condtype: PSBUNACC</b>       | sa/nsa: nsa<br>conddescr: Communication-Transport, 1+1 MSP-APS prot group, Prot. Switch Byte Unacceptable<br>ASAP parameter: psbunacc; default severity: MJ.   |
| <b>condtype: PSBINAPPR</b>      | sa/nsa: nsa<br>conddescr: Communication-Transport, 1+1 MSP-APS prot group, Prot. Switch Byte Inappropriate<br>ASAP parameter: psbinappr; default severity: MJ. |
| <b>condtype: SCM</b>            | sa/nsa: nsa<br>conddescr: Communication-Transport, 1+1 MSP-APS prot group, Switch Channel Mismatch                                                             |

ASAP parameter: scm; default severity: MJ.

**condtype: PRIM**

sa/nsa: nsa

conddescr: Communication-Transport, 1+1 MSP-APS prot group,  
primary section Mismatch

ASAP parameter: prim; default severity: MJ.

**condtype: FESF**

sa/nsa: nsa

conddescr: Communication-Transport, 1+1 MSP-APS prot group, Far  
End Signal Fail

ASAP parameter: fesf; default severity: MJ.





## ASAP Type PATH

---

**Properties of all alarms**

modifier/aidtype: STS1, STS3C, STS12C, STS48C, STS192C, VC3, VC4, VC44C, VC416C, VC464C.

AID: STS1NumAID

Alarm duration: persistent.

**condtype: AIS-P**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} path, Alarm Indication Signal

ASAP parameter: sa\_ais; default severity: NR

ASAP parameter: nsa\_ais; default severity: NR.

**condtype: LOP-P**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} path, Loss of Pointer

ASAP parameter: sa\_lop; default severity: CR

ASAP parameter: nsa\_lop; default severity: MN.

**condtype: SRM-P**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} path, Signal Rate Mismatch

ASAP parameter: sa\_srm; default severity: MJ

ASAP parameter: nsa\_srm; default severity: MN.

**condtype: UNEQ-P**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} path, Unequipped

ASAP parameter: sa\_uneq; default severity: CR

ASAP parameter: nsa\_uneq; default severity: MN.

**condtype: TIM-P**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} path, Trace Identifier Mismatch

ASAP parameter: sa\_tim; default severity: CR

ASAP parameter: nsa\_tim; default severity: MN.

|                        |                                                                                                                                                                                                                 |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>condtype: EXC-P</b> | sa/nsa: sa / nsa<br><br>conddescr: Communication-Transport, {aidtype} path, Excessive Bit Error Ratio<br><br>ASAP parameter: sa_exc; default severity: CR<br><br>ASAP parameter: nsa_exc; default severity: MN. |
| <b>condtype: DEG-P</b> | sa/nsa: sa / nsa<br><br>conddescr: Communication-Transport, {aidtype} path, Degraded Signal<br><br>ASAP parameter: sa_deg; default severity: MJ<br><br>ASAP parameter: nsa_deg; default severity: MN.           |
| <b>condtype: SSF-P</b> | sa/nsa: sa / nsa<br><br>conddescr: Communication-Transport, {aidtype} path, Server Signal Fail<br><br>ASAP parameter: sa_ssf; default severity: NR<br><br>ASAP parameter: nsa_ssf; default severity: NR.        |
| <b>condtype: RFI-P</b> | sa/nsa: sa / nsa<br><br>conddescr: Communication-Transport, {aidtype} path, Remote Defect Indication<br><br>ASAP parameter: sa_rfi; default severity: NR<br><br>ASAP parameter: nsa_rfi; default severity: NR.  |
| <b>condtype: PDI-P</b> | sa/nsa: sa / nsa<br><br>conddescr: Communication-Transport, {aidtype} path, Payload Defect Indication<br><br>ASAP parameter: sa_pdi; default severity: MJ<br><br>ASAP parameter: nsa_pdi; default severity: MN. |



## ASAP Type PATHTERM

---

**Properties of all alarms**      modifier/aidtype: STS1, VC4

AID: VCGNumAID

Alarm duration: persistent.

**condtype: THPSSF**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} CS, Server Signal Fail

ASAP parameter: sa\_thpssf; default severity: NR

ASAP parameter: nsa\_thpssf; default severity: NR.

**condtype: THPLOP**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} CS, Loss of Pointer

ASAP parameter: sa\_thplop; default severity: CR

ASAP parameter: nsa\_thplop; default severity: MN.

**condtype: THPUNEQ**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} CS, Unequipped

ASAP parameter: sa\_thpuneq; default severity: CR

ASAP parameter: nsa\_thpuneq; default severity: MN.

**condtype: THPTIM**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} CS, Trace Identifier Mismatch

ASAP parameter: sa\_thptim; default severity: CR

ASAP parameter: nsa\_thptim; default severity: MN.

**condtype: THPEXC**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} CS, Excessive Bit Error Ratio

ASAP parameter: sa\_thpexc; default severity: CR

ASAP parameter: nsa\_thpexc; default severity: MN.

|                         |                                                                                                                                                                                                        |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>condtype: THPDEG</b> | sa/nsa: sa / nsa<br>conddescr: Communication-Transport, {aidtype} CS, Degraded Signal<br>ASAP parameter: sa_thpdeg; default severity: MJ<br>ASAP parameter: nsa_thpdeg; default severity: MN.          |
| <b>condtype: THPRDI</b> | sa/nsa: sa / nsa<br>conddescr: Communication-Transport, {aidtype} CS, Remote Defect Indication<br>ASAP parameter: sa_thprdi; default severity: NR<br>ASAP parameter: nsa_thprdi; default severity: NR. |
| <b>condtype: THPPLM</b> | sa/nsa: sa / nsa<br>conddescr: Communication-Transport, {aidtype} CS, Payload Mismatch<br>ASAP parameter: sa_thpplm; default severity: CR<br>ASAP parameter: nsa_thpplm; default severity: MN.         |
| <b>condtype: VCLOM</b>  | sa/nsa: sa / nsa<br>conddescr: Communication-Transport, {aidtype} CS, Loss of Multiframe<br>ASAP parameter: sa_vclom; default severity: CR<br>ASAP parameter: nsa_vclom; default severity: MN.         |
| <b>condtype: VCSQM</b>  | sa/nsa: sa / nsa<br>conddescr: Communication-Transport, {aidtype} CS, Sequence Number Mismatch<br>ASAP parameter: sa_vcsqm; default severity: CR<br>ASAP parameter: nsa_vcsqm; default severity: MN.   |



## ASAP Type PORT

---

**Properties of all alarms**      modifier/aidtype: OC3, OC12, OC48, OC192, OC768, STM1E, STM1, STM4, STM16, STM64, STM256

AID: SPortAID

Alarm duration: persistent.

**condtype: WTU3LOF**      sa/nsa: sa / nsa  
conddescr: Communication-Transport, {aidtype} port, WTU3 Loss of Frame  
ASAP parameter: sa\_wtu3lof; default severity: CR  
ASAP parameter: nsa\_wtu3lof; default severity: MN.

**condtype: OCHLOF**      sa/nsa: sa / nsa  
conddescr: Communication-Transport, {aidtype} port, OCh Loss of Frame  
ASAP parameter: sa\_ochlof; default severity: CR  
ASAP parameter: nsa\_ochlof; default severity: MN.

**condtype: PREDCMLOS**      sa/nsa: sa / nsa  
conddescr: Communication-Transport, {aidtype} port, Pre DCM Signal Loss  
ASAP parameter: sa\_predcmlos; default severity: CR  
ASAP parameter: nsa\_predcmlos; default severity: MN.

**condtype: POSTDCMLOS**      sa/nsa: sa / nsa  
conddescr: Communication-Transport, {aidtype} port, Post DCM Signal Loss  
ASAP parameter: sa\_postdcmls; default severity: CR  
ASAP parameter: nsa\_postdcmls; default severity: MN.

**condtype: LOS**      sa/nsa: sa / nsa  
conddescr: Communication-Transport, {aidtype} port, Loss of Signal  
ASAP parameter: sa\_los; default severity: CR

ASAP parameter: nsa\_los; default severity: MN.

**condtype: LOF**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Loss of Frame

ASAP parameter: sa\_lof; default severity: CR

ASAP parameter: nsa\_lof; default severity: MN.

**condtype: RSTIM**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Trace Identifier Mismatch

ASAP parameter: sa\_rstim; default severity: CR

ASAP parameter: nsa\_rstim; default severity: MN.

**condtype: MSEXC**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Excessive Bit Error Ratio

ASAP parameter: sa\_msexc; default severity: CR

ASAP parameter: nsa\_msexc; default severity: MN.

**condtype: MSDEG**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Degraded Signal

ASAP parameter: sa\_msdeg; default severity: MJ

ASAP parameter: nsa\_msdeg; default severity: MN.

**condtype: AIS-L**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Alarm Indication Signal

ASAP parameter: sa\_aisl; default severity: CR

ASAP parameter: nsa\_aisl; default severity: MN.

**condtype: MSSSF**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Server Signal Fail

ASAP parameter: sa\_msssf; default severity: NR

ASAP parameter: nsa\_msssf; default severity: NR.

**condtype: MSPSSF**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Prot. Server  
Signal Fail

ASAP parameter: sa\_mspssf; default severity: NR

ASAP parameter: nsa\_mspssf; default severity: NR.

**condtype: RFI-L**

sa/nsa: sa / nsa

conddescr: Communication-Transport, {aidtype} port, Remote Defect  
Indication

ASAP parameter: sa\_rfil; default severity: NR

ASAP parameter: nsa\_rfil; default severity: NR.

**condtype: DCCRSF**

sa/nsa: nsa

conddescr: Communication-Transport, {aidtype} port, DCC failure

ASAP parameter: sa\_dccrsf; default severity: MJ.

**condtype: LIDRSM**

sa/nsa: nsa

conddescr: Communication-Transport, {aidtype} port, Protocol Version  
Mismatch

ASAP parameter: nsa\_lidrms, default severity: MJ.

**condtype: DCCMSF**

sa/nsa: nsa

conddescr: Communication-Transport, {aidtype} port, DCC failure

ASAP parameter: nsa\_dccmsf; default severity: MJ.

**condtype: LIDMSM**

sa/nsa: nsa

conddescr: Communication-Transport, {aidtype} port, Protocol Version  
Mismatch

ASAP parameter: nsa\_lidmsm; default severity: MJ.



# ASAP Type SNCP-UPSR

---

**Properties of all alarms**      modifier/aidtype: STS1, STS3, STS12, STS48, STS192, VC3, VC4, VC44C, VC416C, VC464C

AID: STS1NumAID

Alarm duration: persistent.

**condtype: PSI**      sa/nsa: nsa

conddescr: Communication-Transport, Path prot group, Path Switch Inhibit

ASAP parameter: psinh; default severity: NA.

**condtype: FAILTOSW**      sa/nsa: nsa

conddescr: Communication-Transport, Path prot group, Path Switch Denial

ASAP parameter: psfail; default severity: NA.





## ASAP Type TIMING

---

**Properties of all alarms** Alarm duration: persistent

**condtype: SYNCRF** sa/nsa: none  
conddescr: Communication-Synchronisation, timing reference, Timing Reference Failure  
ASAP parameter: syncrf; default severity: MJ  
modifier/aidtype: SYST  
AID: External\_timing\_ref\_AID, Line\_timing\_ref\_AID.

**condtype: SYNCLOSS** sa/nsa: none  
conddescr: Communication-Synchronisation, system timing, Loss of Synchronisation  
ASAP parameter: syncloss; default severity: MJ  
modifier/aidtype: SYST  
AID: SystemAID.

**condtype: SYNCT4OUT** sa/nsa: none  
conddescr: Communication-Synchronisation, timing out, T4 quality insufficient  
ASAP parameter: synct4out; default severity: MJ  
modifier/aidtype: OUTT  
AID: External\_Timing\_output\_port\_AID.



## Entity – ASAP relation

---

**Introduction** This section describes which entity is related to which ASAP.

**Entities** For description of the entities see in the fragments of the TL1 message description which defines and describes the entities.  
(Example: The slot entity is described in the configuration fragment.)

The entity of an alarm can be retrieved from the entity in the *condescr* in the ASAP descriptions above so it is not explicitly listed here.

If an entity has a relation to at least one ASAP does it mean that this entity will raise alarms for this entity.

**Entity – ASAP relation** For each ASAP type must exist one ASAP pointer for the entity. Each ASAP pointer is related to only one ASAP type. That means that for some entities more than one ASAP pointer exist.

| Fragment                  | Entity                                                                            | ASAP Type                  | Entity containing ASAP pointer          |
|---------------------------|-----------------------------------------------------------------------------------|----------------------------|-----------------------------------------|
| Administration & Security | Session                                                                           | none                       | none                                    |
| Administration & Security | NE Security Administration                                                        | none                       | none                                    |
| Administration & Security | User Administration                                                               | none                       | none                                    |
| Administration & Security | Security Activity Log                                                             | none                       | none                                    |
| Configuration Management  | System                                                                            | EQUIP-UNPROT               | System                                  |
| Configuration Management  | Bay                                                                               | none                       | none                                    |
| Configuration Management  | Shelf                                                                             | EQUIP-PROT<br>EQUIP-UNPROT | Shelf                                   |
| Configuration Management  | Slot                                                                              | EQUIP-PROT                 | Slot                                    |
| Configuration Management  | Circuit Pack                                                                      | EQUIP-PROT<br>EQUIP-UNPROT | CP                                      |
| Configuration Management  | Port (OC3, OC12, OC48, OC192, OC768, STM1, STM4, STM16, STM64, STM256)            | PORT                       | Port                                    |
| Configuration Management  | Tributary (STS1, STS3C, STS12C, STS48C, STS192C, VC3, VC4, VC44C, VC416C, VC464C) | PATH                       | Tributary<br>(Configuration Management) |
| Fault Management          | Alarm Assignment Profiles                                                         | none                       | none                                    |
| Fault Management          | Alarms                                                                            | none                       | none                                    |
| Fault Management          | Alarm Log                                                                         | none                       | none                                    |

| Fragment                            | Entity                                                   | ASAP Type     | Entity containing ASAP pointer                           |
|-------------------------------------|----------------------------------------------------------|---------------|----------------------------------------------------------|
| Fault Management                    | MDI                                                      | ENV           | MDI                                                      |
| Fault Management                    | MDO                                                      | none          | none                                                     |
| Transmission Cross-Connect Handling | cross-connection                                         | none          | none                                                     |
| Transmission Cross-Connect Handling | Tributary                                                | none          | none                                                     |
| Transmission Cross-Connect Handling | Port                                                     | none          | none                                                     |
| Transmission Cross-Connect Handling | User Byte – Port                                         | none          | none                                                     |
| Transmission Cross-Connect Handling | Ethernet Port                                            | ENET          | Ethernet Port                                            |
| Transmission Cross-Connect Handling | Virtual Concatenation Group                              | ENET          | Virtual Concatenation Group                              |
| Transmission Cross-Connect Handling | Virtual Concatenation Group Tributary (STS1, VC4 )       | PATHTERM      | Virtual Concatenation Group Tributary                    |
| Protection                          | Protection Group 1+1 Equipment Protection                | none          | none                                                     |
| Protection                          | Protection Group 1+1 Multiplex Section / Line Protection | MSP-APS       | Protection Group 1+1 Multiplex Section / Line Protection |
| Protection                          | Protection Group 2-fibre MS-SPRing / BLSR                | MSSPRING-BLSR | Protection Group 2-fibre MS-SPRing / BLSR                |
| Protection                          | Protection Group 4-fibre MS-SPRing / BLSR                | MSSPRING-BLSR | Protection Group 4-fibre MS-SPRing / BLSR                |
| Protection                          | Protection Group Path Protection                         | SNCP-UPSR     | Protection Group Path Protection                         |
| Protection                          | Protection Log                                           | none          | none                                                     |
| Protection                          | Ring Map                                                 | none          | none                                                     |
| Synchronization                     | System Timing                                            | TIMING        | System Timing                                            |
| Synchronization                     | Output Timing                                            | none          | none                                                     |
| Synchronization                     | Assigned Timing Reference                                | TIMING        | Assigned Timing Reference                                |
| Synchronization                     | External Timing Input                                    | none          | none                                                     |
| Synchronization                     | External Timing Output                                   | TIMING        | External Timing Output                                   |
| Software & Database Management      | n.a                                                      | none          | none                                                     |

| Fragment                    | Entity                       | ASAP Type    | Entity containing ASAP pointer |
|-----------------------------|------------------------------|--------------|--------------------------------|
| Data Communications Network | General DCN                  | DCN          | General DCN                    |
| Data Communications Network | DCC Termination              | none         | none                           |
| Data Communications Network | LAN                          | none         | none                           |
| Data Communications Network | OSI Network Layer            | none         | none                           |
| Data Communications Network | OSI Transport Layer and TARP | none         | none                           |
| Data Communications Network | TCP / IP                     | none         | none                           |
| Data Communications Network | IP Map                       | none         | none                           |
| Data Communications Network | IP Tunnel                    | none         | none                           |
| Data Communications Network | MAP                          | none         | none                           |
| Performance Monitoring      | none                         | none         | none                           |
| Configuration Management    | ci-ctl                       | EQUIP-UNPROT | System                         |
| Configuration Management    | fan                          | EQUIP-UNPROT | System                         |
| Configuration Management    | user panel                   | EQUIP-UNPROT | System                         |
| Configuration Management    | power interface              | EQUIP-PROT   | CP                             |





# 7 TL1 messages - transmission and cross-connect handling

## Overview

---

- Purpose** This section contains the TL1 interface definition for the
- transmission domain
  - user byte access functionality
  - gigabit ethernet virtual switch configuration
  - gigabit ethernet port (GEn) configuration
  - virtual concatenation (Group and Tributary) configuration for GEn applications
  - remote test access function.

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|                                                               |                       |
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|                                                              |                       |
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# Cross-connection

## Overview

---

**Purpose** The cross-connection (CRS) commands cover all type of

- creating (ENT-CRS),
- removing (DLT-CRS),
- modifying (ED-CRS) and
- retrieving (RTRV-CRS) cross-connections.

Furthermore the commands ENT-ROLL directly affect existing cross-connections by rolling the input of an existing cross-connection towards another input while keeping the output unchanged.

### **Cross-connections and tributaries**

Physically cross-connections are transport channels between tributaries within an NE. These cross-connections are logically modelled by the entity cross-connection and include provisionable parameters which describe the behavior of these channels. Tributaries are path level units of bandwidth within ports.

These port can be

- either SDH/SONET ports belonging to OPn packs, when using cross-connection with OPn and specified via the AID SPortAID. The related tributaries are given via STS1NumAID or
- Virtual Concatenation Group ports (VCG ports) – i.e. ports related to physical GEn-ports when using cross-connection involving GEn – and specified via the AID VCGPortAID. The related VCG-tributaries are specified via VCGNumAID.

If it is not necessary to distinguish between the STS1NumAID and VCGNumAID the general AID GenTribAID is used to cover all cases.

### **Tributary-rate provisioning versus cross-connection-rate**

For fixed-rate provisioned ports the cross-connection-rate (either the SDH-rate or its equivalent SONET-rate) must match with the tributary-rate. As an example a tributary provisioned to vc44c can be cross-connected only at a rate of vc44c (or STS12, which is equivalent) – requests with other rates will be rejected. This restriction concerning the consistency of tributary-rate and cross-connection-rate



does NOT hold in the case the port is provisioned as adaptive (which is only possible in case of a SONET-port).

Please note that the following features are not part of the current *LambdaUnite*® MSS release and are thus not specified here:

- provisioning of adjunct path-protected cross-connection (no adjunct related parameter)
- conversion of the cross-connection topology (no TL1 command CNVT-CCT)
- changing working and protection leg for path-protected cross-connections (no TL1 command OPR-WKGLEG)
- no adaptive-mode is allowed for both *in\_aids* of a path-protected cross-connection.

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## RTRV-CRS: Retrieve cross-connection

---

The RTRV-CRS-modifier command can be initiated by a user to retrieve information on existing cross-connections in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1

Priority: 1

Abortable: Yes

**Input format** Command Syntax: RTRV-CRS-*modifier*:*tid*:[*in\_aid*]:*ctag*[:*ppgname*];

Either the parameter *in\_aid* or *ppgname* must be present – refer to the "Detailed behavior description" section for details.

**Input parameters** **Important!** Do not use *ppgname* in RTRV-CRS requests. Just use the *in\_aid* parameter in RTRV-CRS requests.

### Command parameters

#### 1. modifier

This parameter indicates the cross-connection rate on which the retrieve cross-connection command acts.

A distinction of the *modifier* usage has to be made between the retrieval (RTRV-CRS-*modifier*) and the other CRS-related commands (ENT-CRS-*modifier*, DLT-CRS-*modifier*, ED-CRS-*modifier*, ENT-ROLL-*modifier*):

- The establishment (ENT-CRS-*modifier*), removal (DLT-CRS-*modifier*), modification (ED-CRS-*modifier*) or rolling (ENT-ROLL-mod) of cross-connections is independent of the provisioned port interface-standard. I.e., either the SDH-rates (VC3, VC4 etc.) or the corresponding SONET-rates (STS1, STS3 etc.) can be used as modifier and no command validation between port interface-standard and *modifier* will be performed.
- For the RTRV-CRS-*modifier* command the following holds: Again, no command validation between port interface-standard and *modifier* will be performed. The output parameter *rate*, however, is filled with the rate which was used with the RTRV-CRS-*modifier* command.

Example: if a cross-connection was entered as ENT-CRS-VC3 then a RTRV-CRS-ALL as well as a RTRV-CRS-VC3 as well as RTRV-CRS-STS1 will return this cross-connection with the *rate* parameter VC3.

Type: Alphanumeric value set.

Range:

- ALL (Note: using the all parameter has no restriction in using ranging of the *in\_aid*, thus up to all 4 all-parameter (one for the *modifier*, three for the *in\_aid* are allowed))
  - SDH *modifier*: VC3, VC4, VC44C, VC416C, VC464C.
  - SONET *modifier*: STS1, STS3, STS12, STS48, STS192.
2. tid – Target Identifier  
Target Identifier. Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. in\_aid – Input Access Identifier  
This parameter specifies the source of the cross-connection. In case of a 1-way cross-connection the source of a cross-connection is unambiguous. In this case the cross-connection will be retrieved by the RTRV-CRS, which has the identical *in\_aid*.  
In case of a 2-way cross-connection the source is not defined (the source could be the *in\_aid* or the *out\_aid* of the cross-connection). In this case both aids (*in\_aid* or *out\_aid*) of the cross-connection can be used as the *in\_aid* parameter of the RTRV-CRS command. The RTRV-CRS command will then return the *in\_aid* – parameter used in the RTRV-CRS command as the *in\_aid* of the RTRV-CRS reply.

Example:

ENT-CRS-VC4:NName:1-1-#-#-1-1-1,1-1-#-#-2-1-1:123456:2way;

RTRV-CRS-VC4:NName:1-1-#-#-2-1-1:123457;

M 123457 COMPLD "1-1-#-#-1-1-1,1-1-#-#-2-1-1:vc4..... ;

Type: GenTribAID.

Range: The all-parameter is accepted for the slot-, port- and trib-part of the AID. For the port the all-parameter is to be distinguished between all when referring OPn packs and GENval1 when referring the GEN.

For example the following *in\_aids* are valid:

- 1-1-#-#-all-all-all specifying all tributaries and all ports in the whole shelf
- 1-1-#-#-2-1-all specifying all tributaries of the first port of the pack in slot-number=02
- 1-1-#-#-3-vall-all specifying all tributaries of the first port of the (GEn) pack in slot-number=03

4. ctag – Correlation Tag

See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

5. ppgname – Path protection group name

This parameter is a user-defined string that identifies a path protection group. This parameter is applicable to path-protected cross-connections only and is omitted for non path-protected cross-connections.

Note: Storage and retrieval of the *ppgname* is case sensitive, but the actual use of the *ppgname* to determine the corresponding protection group is case insensitive.

For details please refer to parameter *ppgname* in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

Type: For details please refer to parameter *ppgname* in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

Range: For details please refer to parameter *ppgname* in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

Default: NULL.

**Output format** In response to a valid RTRV-CRS-mod command, the following output is returned:

```
sid date time
M ctag COMPLD
  "in_aid,out_aid:rate[,in_aid2]:spec_block"
  ...
  ...
  "in_aid,out_aid:rate[,in_aid2]:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are described in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. **in\_aid** – Input Access Identifier

Description: The parameter **in\_aid** specifies the tributary which is the source of the cross-connection. In detail:

- In case of a 1-way cross-connection this parameter specifies the source of the cross-connection and is identical to the one used as input parameter
- In case of a 2-way cross-connection this parameter is identical to the one used as input parameter (Please refer also to the description of the input parameter **in\_aid** of the “RTRV-CRS: Retrieve cross-connection” (7-6) command).
- In case of a path-protected cross-connection this parameter also is identical to the one used as input and may specify either the source of the working leg or the source of the protection leg – the distinction is made via the spec-block parameter **repleg** (see below). If **in\_aid** specifies the working-leg part than **in\_aid2** (see below) specifies the protection-leg part and vice versa.

Type: STS1NumAID (when using OPn packs ) or VCGNumAID (when using GEn).

Range: n.a. (all values shall never occur as part of an output parameter).

2. **out\_aid** – Output Identifier

This parameter specifies the tributary which is the sink of the cross-connection.

Type: STS1NumAID (when using OPn packs ) or VCGNumAID (when using GEn).

Range: n.a. (all values shall never occur as part of an output parameter).

3. **in\_aid2** – Input Access Identifier 2

This parameter is applicable to and is present for path-protected cross-connections only and specifies either the source of the protection leg or the source of the working leg.

This depends on the value of the *repleg* parameter:

- E.g. for the combination: *in\_aid*=IN1, *out\_aid*=OUT, *in\_aid2*=IN2 and *repleg*=1WAYPSW the worker leg is given by IN1 -> OUT and the protection leg is given by IN2 -> OUT;
- for the combination: *in\_aid*=IN1, *out\_aid*=OUT, *in\_aid2*=IN2 and *repleg*=1WAYPSP the worker leg is given by IN2 -> OUT and the protection leg is given by IN1 -> OUT.

Thus *in\_aid* and *out\_aid* specify one leg of the legpair of a path-protected cross-connection, while *in\_aid2* and *out\_aid* specify the second leg.

Type: STS1NumAID.

Note: Using VCGNumAID (when using GEn) s NOT applicable as the GEn can not be the input to a path-protected cross-connection.

Range: n.a. (all values shall never occur as part of an output parameter).

4. rate

This parameter indicates the cross-connection rate. For a detailed description please refer to the input parameter *modifier*.

Type: Alphanumeric value set

Range:

- VC3
- VC4
- VC44C
- VC416C
- VC464C
- STS1
- STS3
- STS12
- STS48
- STS192.

### Spec block parameters

1. *loca* – Location-a

This parameter specifies the TID of the node at which service is added to the BLSR. This parameter is required for BLSR THROUGH, INTER-BLSR and DROP connections only. The *loca* parameter value is an empty string for ADD and non-BLSR connections.

A 2-way cross-connection is considered to be a DROP if the *out\_aid* is a non BLSR tributary.

The figure in “2-way scenario” (7-18) depicts the 2-way scenario (the 3 NEs should be seen as part of an BLSR).

**Inter Ring Cross-connections with collapsed node:** Note that beside the above described THROUGH case there can be also another situation where both *loca* and *locz* are different from the empty string: If two rings are interconnected in a collapsed node then *loca* refers to the (add-node of the) ring where the signal is dropped from, and *locz* refers to the (drop-node of the) ring where the signal is added to. In such cases the cross-connection cannot be provisioned as bidirectional, thus the information is still unambiguous.

**A note to the *loca2* parameter:** Although *loca2* (Location-a-2) is a parameter which is used in the ENT-CRS command, *loca2* is not retrieved explicitly. This is due to the fact that for path-protected cross-connections – and only for those this *loca2* is applicable – the retrieval will be on a leg-basis and not on a leg-pair basis. In other words: If a path-protected cross-connection is retrieved two entries will be sent, one for the working leg (incl. the *loca* and *locz* parameter) and one for the protection leg (incl. the *loca* parameter and the same *locz* parameter, and in this case the *loca* returned is the *loca2* as entered when establishing the path-protected cross-connection). *loca* is also required for EXTRA TRAFFIC connections. (In contrast to incoming references from other commands to this whole chapter it is exclusively applicable for the command RTRV-CRS.). For extra traffic the value will be generated automatically and thus it is only retrievable. For information about the automatic generation of *loca* refer to the parameter *sqfa*.

Type: TID or empty string.

Range: Please refer to the TID definition in the “RTRV-HDR: Retrieve header” (5-8) description.

Default: empty string "";

Note: In output direction the empty string appears as \".

2. locz – Location-z

This parameter specifies the TID of the node at which service is dropped from the BLSR. This parameter is required for BLSR THROUGH, INTER-BLSR and ADD connections. The *locz* parameter value is an empty string for DROP and non-BLSR connections.

A 2-way cross-connection is considered to be a ADD if the *in\_aid* is a non BLSR tributary.

Refer to the figure in “2-way scenario” (7-18) for further explanation.

*locz* is also required for EXTRA TRAFFIC connections. For extra traffic the value will be generated automatically and thus it is only retrievable. For information about the automatic generation of *locz* refer to the parameter *sqfz*.

Type: TID or empty string.

Range: Please refer to the TID definition in the “RTRV-HDR: Retrieve header” (5-8) description.

Default: empty string "";

Note: In output direction the empty string appears as \".

3. lpbkstat – Loopback-Status

This parameter specifies whether a cross-connection loopback exists on the input tributary or the output tributary of the cross-connection.

Type: Alphanumeric value set.

Range: YES, NO (default).

4. omode – Output Mode

This parameter specifies the output mode of the cross-connection:

- for a 1-way cross-connection the output is clearly defined by the destination (*out\_aid*)
- for a 2-way cross-connection the output is defined as the source-to-destination direction (*in\_aid* to *out\_aid*)
- NORM: this is the normal output i.e. the signal from the *in\_aid* is passed through to the *out\_aid*;



- IDLE/UNEQ: this mode outputs an unequipped signal;
- AIS: this mode outputs an AIS signal.

***omode and adaptive-mode:*** In case a SONET-port is provisioned to adaptive-mode setting the ***omode*** to IDLE/UNEQ or AIS will be lead to transmitting the corresponding signal (UNEQ or AIS) on STS1 base for all the STS1 tributary comprising the STS-N signal. Thus for an output of an STS3 cross-connection, if either AIS or IDLE/UNEQ is selected each of the 3 STS1 will output the AIS or IDLE/UNEQ signal. When switching the ***omode*** back to NORM the original STS3 cross-connection-signal will re-appear again.

***omode in case of path-protected cross-connection:*** In case of a path-protected cross-connection the ***omode*** affects the output of the path selector and is thus not setable on a per leg base. In other words the ***omode*** insertion is done after (downstream direction) the selector function.

Type: Alphanumeric value set.

Range:

- NORM (default)
- IDLE/UNEQ
- AIS

#### 5. repleg – Reported Leg Pair

This parameter provides compact information about the leg(s) of cross-connections and is derived, as shown in “Derivation of repleg” (7-18), from a combination of the following elementary parameter:

- atomic cross-connection topology
- leg status
- path-protected group working leg (if applicable i.e. being part of a protection group).

**Atomic cross-connection topology:**

Two atomic cross-connection topologies are supported:

- Point to point: The point to point cross-connection consists of one leg only, which is defined by its source-trib (*in\_aid*) and its destination-trib (*out\_aid*) and its particular transmission rate.
- path-protected: The path-protected cross-connection consists of a path protection group with two legs, a working leg and a protection leg – the declaration of working respectively protection is made when establishing the cross-connection (ENT-CRS command).

The two legs are defined by two input tributaries and one output tributary – thus one input tributary and the output tributary form the working leg while the other input tributary and the output tributary form the protection leg.

Note that:

both input tributaries must belong to ports with the same interface standard (either SONET or SDH), due to different switch criteria;

both legs must be at the same cross-connection rate.

**Leg status:**

The leg status indicates whether a leg is monitored and reported as a 1-way cross-connection or a leg pair i.e. a 2-way cross-connection.

- 1-way: The leg status for a path-protected cross-connection is always defined as 1-way.
- 2-way: The leg status for a (non path-protected) cross-connection is set to 2-way if all the following conditions are fulfilled:
  - there are 2 cross-connections in opposite direction between the same tributaries;
  - both of these cross-connections have the same rate (independent if the SONET or SDH rate was used when establishing i.e. VC3 is equivalent to STS1, VC4 is equivalent to STS3 etc);
  - the source and destination TIDs do match i.e. the source TID of one leg is the destination TID of the other leg and vice versa (this condition of course holds only in case of BLSR cross-connections).

Note that the criteria for a 2-way leg-pair do not depend on whether the two legs were set up at the same time, nor on whether either leg was set up as part of a 2-way cross-connection topology

**Path Protection leg role:**

This indicates if the leg of a path protection group is defined as the working (W) leg or the protection (P) leg.

1WAYPSW and 1WAYPSP stands for 1-way path switched working and 1-way path switched protection respectively.

In “repleg example” (7-19) examples show the **repleg** parameter for several cross-connection configurations including compound cross-connection.

Type: Alphanumeric value set.

Range

- 1WAY
- 2WAY
- 1WAYPSW
- 1WAYPSP.

The values 1WAYPAP and 1WAYPAW are not supported in the initial release.

6. rtnomode – Return Output Mode

This parameter specifies the output mode for the return direction of the cross-connection.

- for a 2-way cross-connection the return output mode is defined as the destination-to-source direction (**out\_aid** to **in\_aid**) For the meaning of the values please refer to **omode** description.
- for a 1-way cross-connection and path protected cross-connection this parameter is omitted.

Type: Alphanumeric value set.

Range: NORM (default), IDLE/UNEQ, AIS.

7. rntacstat – Return Test Access Status

This parameter indicates whether the input tributary of the return direction (destination-to-source) of a 2-way cross-connection is cross-connected or bridged to a test access tributary of a test session. In the case of a 1-way cross-connection the parameter shall be omitted.

Type: Alphanumeric value set.

Range: YES, NO (default).

8. **rtnxcappl** – Return cross-connection application  
This parameter is a numeric value which indicates the application for which the return cross-connection is used in the context of compound cross-connection topologies.
  - for a 1-way cross-connection this parameter is not applicable and will thus be omitted.
  - for a 2-way cross-connection the parameter is present.Type: same as **xcappl**.  
Range: same as **xcappl**.  
Default: The default value is 0.
9. **rtnxcnum** – Return cross-connection number  
This parameter is a 9 digit number, identifying the cross-connection number for the return direction (destination to source i.e. **out\_aid** to **in\_aid**) of a 2-way cross-connection.
  - for a 1-way cross-connection this parameter is not applicable and will thus be omitted.
  - for a 2-way cross-connection the parameter is present.Type: same as **xcnum**.  
Range: same as **xcnum**.  
Default: The default value is 000000000.
10. **taccstat** – Test Access Status  
This parameter indicates whether the input tributary of a 1-way cross-connection or the input tributary of the source-to-destination direction of a 2-way cross-connection is crossconnected or bridged to a test access tributary of a test session.  
Type: Alphanumeric value set.  
Range: YES, NO (default).
11. **xcappl** – cross-connection application  
This parameter is a numeric value which indicates the application for which the cross-connection is used in the context of compound cross-connection topologies.  
The parameter is not further processed in the NE, but only stored (when establishing or modifying the cross-connection) and returned when retrieving the cross-connection.  
The numeric values are assigned to appropriate text strings (see Range below) and the manager should display these value in case of a “RTRV-CRS: Retrieve cross-connection” (7-6).

As a possible assignment proposal the following may serve:

- 0) Unknown
- 1) 1-Way Point-to-Point
- 2) 1-Way Path-Protected
- 3) 1-Way Adjunct Path-Protected
- 10) 2-Way Point-to-Point
- 20) UPSR (or SNCP Ring) Add, Drop
- 21) UPSR (or SNCP) Ring-to-Ring, Single Node Interconnection, Same NE
- 22) UPSR (or SNCP) Drop, 1-Way Broadcast
- 30) Logical Ring (or SNCP) Add, Drop
- 40) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Node
- 41) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in same NE
- 42) Ring Interworking, Dual Transmit, BLSR (or MS-SPRing) Terminating Node
- 50) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring)
- 51) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring) Nodes in same NE
- 60) 1-Way Broadcast -- note: this is with N greater than or equal to 2.

Type: numerical value set.

Range: {0, 1, 2,..., 255}.

Default: The default value is 0.

12. **xnum** – cross-connection number

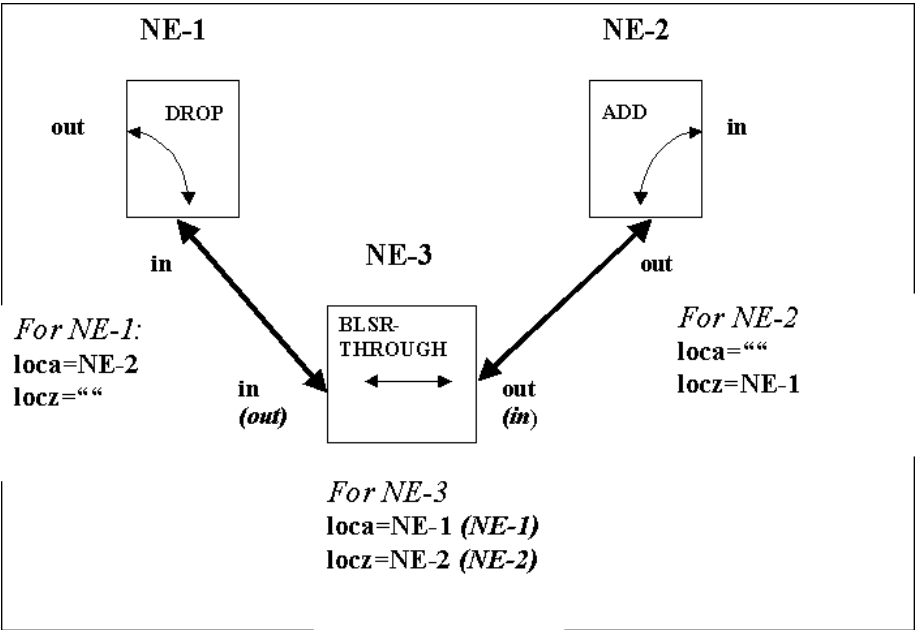
This parameter is a 9 digit number, identifying each leg in a specific compound cross-connection. (Compound cross-connection are a composition of several atomic cross-connection in order to form complex scenarios like e.g. described in "Example input/output" section of the RTRV-CRS command like UPSR, DRI etc.).

Like the *xcap1* parameter the *xnum* parameter is not further processed in the NE, but only stored (when establishing or modifying the cross-connection) and returned when retrieving the cross-connection. It may be used by a manager to characterize

and group cross-connections belonging to complex cross-connection topology (e.g. compound cross-connections as used in ring interworking scenarios).  
Type: numeric value set (9 digit).  
Range: 000000000 .. 999999999.  
Default: The default value is 000000000.

13. xconcls – cross-connection class  
This parameter identifies, whether the cross-connection has been setup in the TRADITIONAL way by an operator via the ENT-CRS command or via the NN application as part of an ENT-PATH command. This parameter therefore also indicates who is the owner of the cross-connection and can modify or delete it.  
Note: Refer to the NN TL1 catalogue for the ENT-PATH command.  
Type: alphanumeric value set.  
Range: TRADITIONAL, NN.

2-way scenario

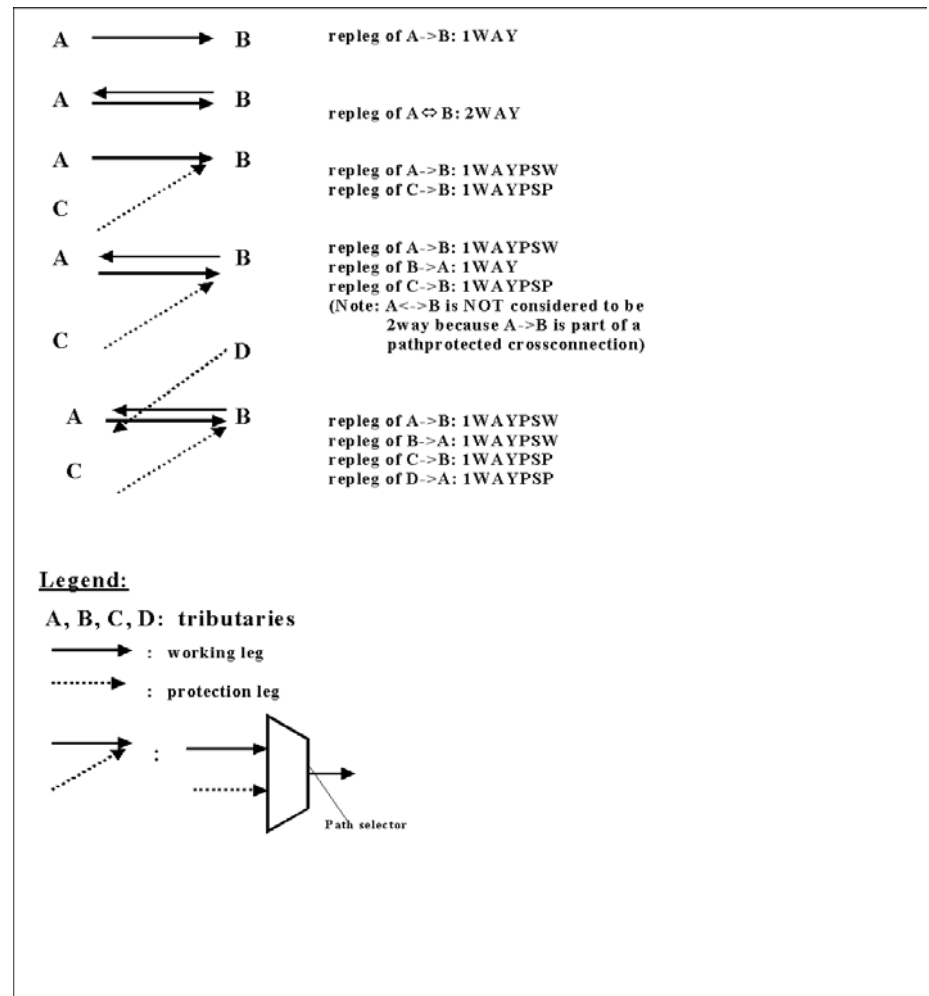


Derivation of repleg

| Atomic cross-connection Topology | Path Protection Leg Role | Leg Status | Reported Legpair ( <i>repleg</i> ) |
|----------------------------------|--------------------------|------------|------------------------------------|
|----------------------------------|--------------------------|------------|------------------------------------|

|                |      |       |         |
|----------------|------|-------|---------|
| point-to-point | n.a. | 1-way | 1WAY    |
| point-to-point | n.a. | 2-way | 2WAY    |
| path-protected | W    | 1-way | 1WAYPSW |
| path-protected | P    | 1-way | 1WAYPSP |

### repleg example



**Detailed behavior  
description**

The RTRV-CRS command allows the retrieval of existing cross-connection according to the following characteristics:

- rate (via the mandatory ***modifier*** parameter)
- input tributary (via the optional/mandatory [in case ***ppgname*** is omitted] ***in\_aid*** parameter)
- path protection group name (via the optional/mandatory [in case ***in\_aid*** is omitted] ***ppgname*** parameter).

In case of a 1-way or 2-way cross-connection a single entry will be returned, in case of a path-protected cross-connection two entries will be returned (one entry for the worker-leg and the second one for the protection-leg) – see also the example-section.

Only the legs meeting the characteristics of the request will be in the reply in case of path-protected cross-connection. The NE will only add matching legs which form together with the reported legs a path-protected cross-connection topology.

For the rate and input tributary either concrete value or the ranging via all (and val1 for the port-aid in case of using the GEN) can be used.

In case the given set of input parameter does not match with existing cross-connection(s), the command is accepted BUT no information is returned i.e. the output contains the empty string "". This case happens if e.g. the rate is specified to vc4 but the ***in\_aid*** refers to a tributary, which does not match with the boundary rules for vc4 e.g. 1-1-#-#-1-1-2.

The ***ppgname*** is applicable only for cross-connection which are related to a protection group of ***prototype***=PATHDRI. In case ***in\_aid*** is omitted the ***ppgname*** must not be omitted and the command is acting on all protection groups (of ***prototype***=PATHDRI) with the specified ***ppgname***.

The use of ***in\_aid*** AND ***ppgname*** in one command request is not allowed; i.e. their use is mutually exclusive. If no match is found the command will complete but no output is returned (empty string).

Storage and retrieval of the ***ppgname*** is case sensitive, but the actual use of the ***ppgname*** to determine the corresponding protection group is case insensitive.



Due to the specified retrieval behavior for path-protected cross-connection, it can happen that only one leg composing the path-protected cross-connection will be in the reply.

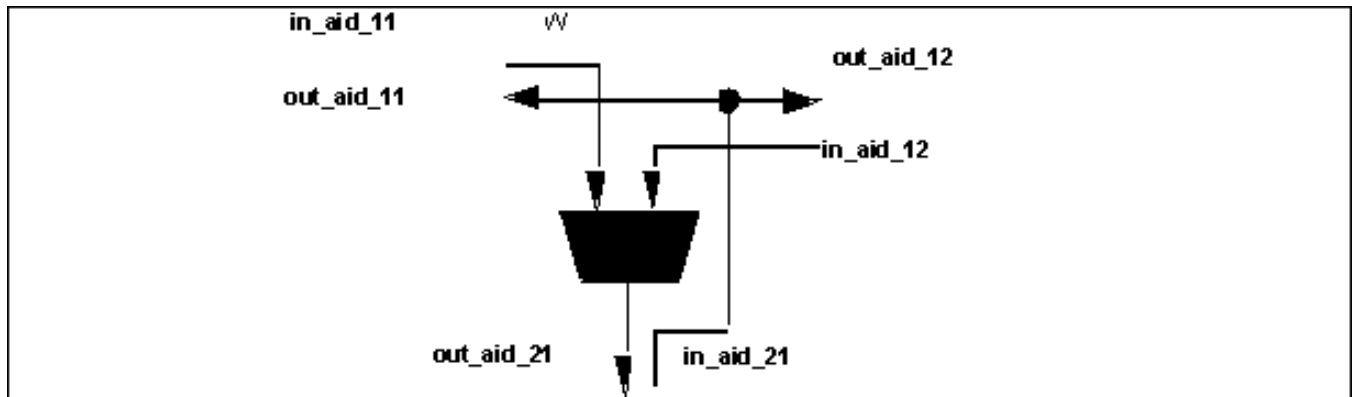
### Update affected entities

The RTRV-CRS command does not generate a REPT DBCHG message.

### Example input/output

#### Example 1

Suppose the following compound cross-connection, as used in UPSR application, is given:



RTRV-CRS-all:UNITE-NE:1-1-#-#-all-all-all:123456; will then output (the blank lines are for better reading):

```
in_aid_11,out_aid_21:vc4,,in_aid_12:lpblstat=NO,omode=NORM,  
repleg=1WAYPSW,xcappl=20,xcnum=123456789;
```

```
in_aid_12,out_aid_21:vc4,,in_aid_11:lpblstat=NO,omode=NORM,  
repleg=1WAYPSP,xcappl=20,xcnum=123456789;
```

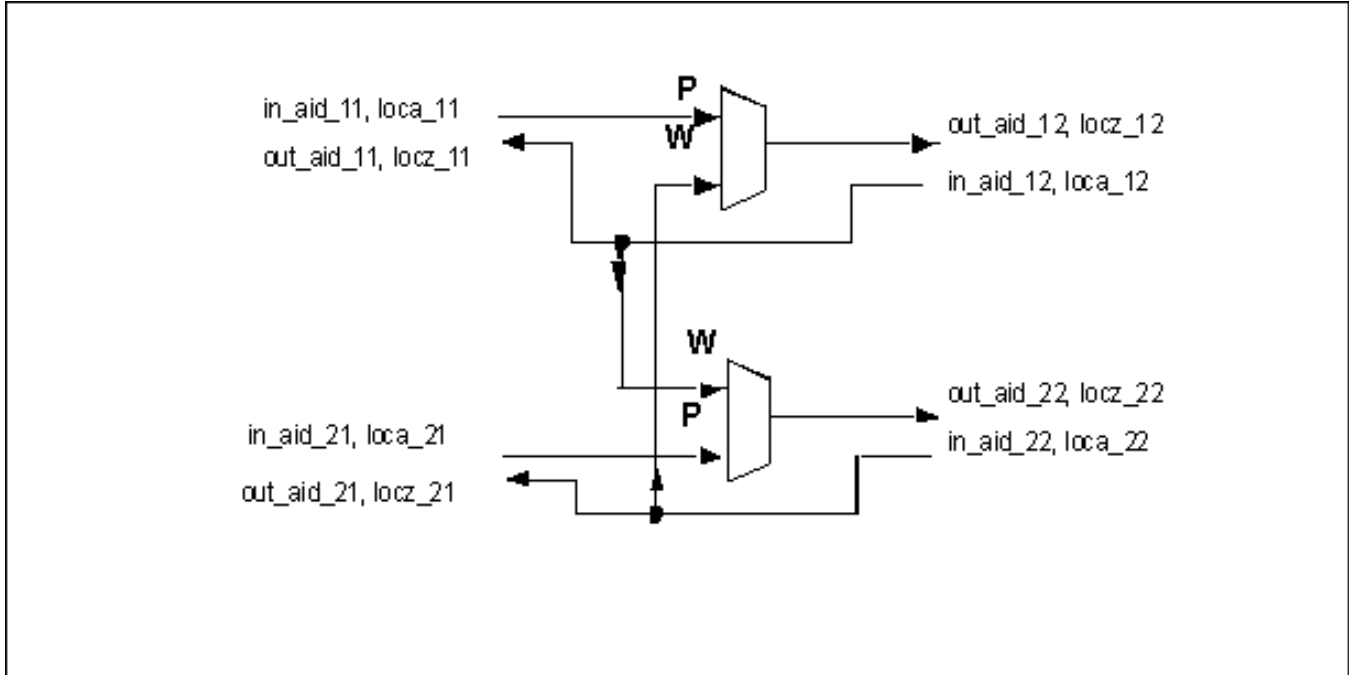
```
in_aid-21,out_aid_11:vc4:omode=NORM,repleg=1WAY,xcappl=20,  
xcnum=123456789;
```

```
in_aid-21,out_aid_12:vc4:omode=NORM,repleg=1WAY,xcappl=20,  
xcnum=123456789;
```

The upper 2 outputs specify the path-protected cross-connection, consisting of 2 legs. The lower 2 outputs specify the 2 legs of the bridge.

### Example 2

Suppose the following compound cross-connection configuration is given:



A ring interworking with drop and continue for a BLSR with primary nodes in the same NE. RTRV-CRS-all:UNITE-NE:1-1-#-#-all-all-all:123456; will then output (the blank lines are for better reading):

```
in_aid_11,out_aid_12:vc4,,in_aid_22:loca=loc_a11,locz=locz_12,  
lpblstat=NO,omode=NORM,repleg=1WAYPSP,xcappl=41,  
xcnum=011031111;
```

```
in_aid_22,out_aid_12:vc4,,in_aid_11:loca=22,locz_12,lpbkstat=NO,  
omode=NORM,repleg=1WAYPSW,xcappl=41,xcnum=011031111;
```

```
in_aid_12,out_aid_11:vc4:loca=loca_12,locz=locz_11,omode=NORM,  
repleg=1WAY,xcappl=41,xcnum=011031111;
```

```
in_aid_12,out_aid_22:vc4,,in_aid_21:loca=loc_a12,locz=locz_22,  
lpblstat=NO,omode=NORM,repleg=1WAYPSW,xcappl=41,  
xcnum=011031111;
```

```
in_aid_21,out_aid_22:vc4,,in_aid_12:loca=21,locz_22,lpbkstat=NO,  
omode=NORM,repleg=1WAYPSP,xcappl=41,xcnum=011031111;
```

```
in_aid_22,out_aid_21:vc4:loca=loca_22,locz=locz_21,omode=NORM,  
repleg=1WAY,xcappl=41,xcnum=011031111;
```

The first 3 outputs specify the upper part of the configuration while the last 3 outputs specify the lower part.

### Example 3

Suppose no cross-connections do exist, or the input data do not match with existing cross-connections, then the output would be an empty string: "".

RTRV-CRS for a cross-connection established via ENT-CRS-VC4 with a specified in\_aid:

```
RTRV-CRS-VC4:LT-UNITE-123:1-1-#-#-1-1-1:123456;  
LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-1-1-1,1-1-#-#-2-1-1:VC4:lpbkstat=NO,omode=NORM,  
repleg=2WAY,rtnomode=NORM,rtnxcappl=20,  
rtnxcnum=123456789,xconcls=TRADITIONAL,xcappl=20,  
xcnum=123456789"  
;
```

RTRV-CRS for a cross-connection established via ENT-PATH with a specified in\_aid:

```
RTRV-CRS-VC4:LT-UNITE-123:1-1-#-#-1-1-1:123456;  
LT-UNITE-123 00-01-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-1-1-1,1-1-#-#-2-1-1:VC4:lpbkstat=NO,omode=NORM,  
repleg=2WAY,rtnomode=NORM,rtnxcappl=0,rtnxcnum=000000000,  
xconcls=NN,xcappl=0,xcnum=000000000"  
;
```

## Error responses

### Validation rule: *in\_aid* or *ppgname* existence

RTRV command processing verifies that either *in\_aid* is or *ppgname* is present.

**Error code:** IDNC - Input Data Not Consistent, *in\_aid* or *ppgname* needed

**Related TL1 messages**

- “DLT-CRS: Delete cross-connection” (7-53)
- “ED-CRS: Edit Cross-connection” (7-46)
- “ENT-CRS: Enter cross-connection” (7-25)

**References** GR-199-CORE



## ENT-CRS: Enter cross-connection

---

The ENT-CRS-*modifier* command can be initiated by a user to establish a cross-connection between tributaries in the NE.

The *modifier* in the ENT-CRS command indicates the cross-connection rate of the tributary for which the command is applied to. There is no difference if the rate is specified as a SONET rate (STS1, STS3,..) or as SDH-rate (VC3, VC4, ...) for the establishment of the cross-connection i.e. the ENT-CRS-*<sonet-rate>* yields to the same (with the exception mentioned next) physical and logical behavior as ENT-CRS-*<sdh-rate>*. No check is made if the *modifier* matches the interface-standard of the port i.e. if the port is provisioned as SONET (resp. SDH) and the *rate* is a SONET (resp. SDH) rate. The only difference between entering a cross-connection via SONET- or SDH-rate as modifier is that a RTRV-CRS-*modifier* will return the same output parameter *rate* as was used when entering the cross-connection.

The number of cross-connections from the same tributary is restricted to two i.e. bridging (1:2) is possible but no broadcast 1:N, N>2 .

See section Error response concerning not supported/allowed combinations of input/output for cross-connections.

### Physical preconditions prior to establishing a cross-connection

Please note that (for the ENT-CRS command processing) it is not necessary that the packs necessary for establishing traffic (i.e. the switch and the optical-packs OPn or GEn) are physically present and operable; Instead it is sufficient that those packs are pre-/provisioned and the corresponding logical entities are created in the database of the NE.

#### Properties

Login Privilege: User Privilege Code (UCFC/UCAL): P3

Priority: 3

Abortable: No

#### Input format

Command Syntax: ENT-CRS-*modifier:tid:in\_aid,out\_aid:ctag::[cct][,in\_aid2][:spec\_block]*;

## Input parameters

### Command parameters

1. modifier  
This parameter indicates the cross-connection rate on which the ENT-CRS command acts on.  
For detailed description please refer to the “RTRV-CRS: Retrieve cross-connection” (7-6) command.  
Type: Alphanumeric value set.  
Range:
  - VC3
  - VC4
  - VC44C
  - VC416C
  - VC464C
  - STS1
  - STS3
  - STS12
  - STS48
  - STS192.
2. tid – Target Identifier  
Target Identifier. Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. in\_aid – Input Access Identifier  
This parameter specifies the source of the cross-connection. For a detailed description please refer to the *in\_aid* input parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Type: For a detailed description please refer to the *in\_aid* input parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Range: No use of the all value within the *in\_aid* is allowed.
4. out\_aid – Output Identifier  
This parameter specifies the sink of the cross-connection. For a detailed description please refer to the *out\_aid* output parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Type: For a detailed description please refer to the *out\_aid* output parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Range: No use of the all value within the *out\_aid* is allowed.

5. ctag – Correlation Tag  
See definition of “RTRV-HDR: Retrieve header” (5-8).
6. cct – cross-connection Topology  
This parameter specifies the topology of the cross-connection to be established via the ENT-CRS command.  
The topology defines
  - – the number of legs of the cross-connection
  - – whether both legs belong to the same tributary
  - – whether a path protection is included.The following values are possible:
  - 1WAY: the cross-connection consists of one leg given by the *in\_aid* to the *out\_aid*
  - 2WAY: the cross-connection consists of two legs given by the *in\_aid* to the *out\_aid* and the return leg given by the *out\_aid* to the *in\_aid*
  - 1WAYPPROT: the cross-connection consist of one leg (the worker leg) given by *in\_aid* to *out\_aid* and another leg (the protection leg) given by *in\_aid2* to the *out\_aid*. The path selector function is associated with the tributary of *out\_aid*.Type: Alphanumeric value string.  
Range:
  - 1WAY
  - 2WAY (default)
  - 1WAYPPROT.
7. in\_aid2 – Input Access Identifier 2  
This parameter is applicable to path-protected cross-connections only and specifies the source of the protection leg.  
Thus *in\_aid* and *out\_aid* specify the working leg while *in\_aid2* and *out\_aid* specify the protection leg of a path-protected cross-connection. For non path-protected cross-connection the parameter *in\_aid2* must be omitted.  
Both input aids (*in\_aid* and *in\_aid2*) have to be related to ports with the same interface mode being either SDH or SONET. This is due to different switch criteria for SONET and SDH.  
Type: STS1NumAID.  
Note: Using VCGNumAID (when using GEn) is NOT applicable

as the GEn can not be the input to a path-protected cross-connection.

Range: No use of the all value within the *in\_aid2* is allowed.

Default: None (a valid value is needed on case of a path-protected cross-connection – no default is defined).

### Spec block parameters

1. **htmr** – Hold Off Timer  
This parameter specifies the value of the hold-off timer for automatic protection switching. This parameter is applicable to path-protected cross-connections only and shall be omitted for non path-protected cross-connections.  
For details please refer to parameter *htmr* in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. **loca** – Location-a  
For a detailed description please refer to parameter *loca* in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Note that *loca* parameter is omitted for non-BLSR and BLSR-ADD cross-connection.
3. **loca2** – Location-a-2  
This parameter specifies the TID associated with *in\_aid2* of the protection leg of a path-protected cross-connection.  
For the syntax, range and default definition please refer to *loca* in the “RTRV-CRS: Retrieve cross-connection” (7-6) section.  
Please note that *loca-2* parameter is omitted for non-BLSR cross-connection. Please further note the remark given in the *loca* description of the “RTRV-CRS: Retrieve cross-connection” (7-6) section.
4. **locz** – Location-z  
For a detailed description please refer to parameter *locz* in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Note that *locz* parameter is omitted for non-BLSR and BLSR-DROP cross-connection.
5. **omode** – Output Mode  
For a detailed description please refer to parameter *omode* in “RTRV-CRS: Retrieve cross-connection” (7-6).
6. **ppgname** – Path Protection Group Name  
For a detailed description please refer to parameter *ppgname* in “RTRV-CRS: Retrieve cross-connection” (7-6).



7. **rme – Revertive Mode Enable**  
This parameter specifies whether the path protection operates in revertive-mode (rme=ENABLE) or non-revertive-mode (rme=DISABLE).  
This parameter is applicable to path-protected cross-connections only and shall be omitted for non path-protected cross-connections.  
For details please refer to parameter **rme** in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
8. **rtnomode – Return Output Mode**  
The parameter **rtnomode** (return output mode) is only applicable for 2way cross-connection and is omitted for 1way and path-protected cross-connections.  
For a detailed description please refer to parameter **rtnomode** in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Note the default values:
  - For a 1way cross-connection the default value is NOT-APPLICABLE, but the parameter must be omitted in the ENT-CRS command.
  - For a 2way cross-connection the default value is: NORMAL.
9. **snctype – SNCP Type**  
This parameter is used to specify the SNCP mode i.e. the switch criteria used for automatic protection switching. This parameter is mandatory for path-protected cross-connections and only applicable to them. The parameter shall be omitted for non path-protected cross-connections.  
For details please refer to parameter **snctype** in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
10. **wtr – Wait To Restore Time**  
This parameter specifies the value of the wait-to-restore time for automatic protection switching. This parameter is applicable to path-protected cross-connections only and is omitted for non path-protected cross-connections.  
For details please refer to parameter **wtr** in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

11. **xcappl** – Cross-connection Application  
For a detailed description please refer to parameter **xcappl** in  
“RTRV-CRS: Retrieve cross-connection” (7-6).
12. **xcnum** – Cross-connection Number  
For a detailed description please refer to parameter **xcnum** in  
“RTRV-CRS: Retrieve cross-connection” (7-6).

**Output format** If the ENT-CRS command completes successfully, then the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

The output parameters **sid**, **date**, **time**, and **ctag** included in the normal completion response are described in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behavior description

##### Behavior **cct=1WAY, 2WAY**

Cross-connections can be established via the ENT-CRS-mod command between tributaries of type:

- STS1-tribs: Tribs related to SDH/SONET ports (i.e. ports of OPn packs ) - the AID for these tribs being specified as STS1NumAID (refer to the AID definition) or
- VCG-tribs: Tribs related to VCG-ports (i.e. (logical) ports of GEn pack - please refer to [7], [8], [9], [10] for details) - the AID for these tribs being specified as VCGNumAID (refer to the AID definition).

Between STS1-tribs cross-connection can be established for all the specified SDH/SONET rate (i.e. VC3/STS1, VC4/STS3, VC44c/STS12, VC16c/STS48, VC464c/STS192).

As soon as a VCG-trib is involved in a cross-connection (either cross-connection between VCG-tribs or between VCG-trib and STS1-trib) only the cross-connection rates STS1/VC3 for a SONET-provisioned GEn-port or STS3/VC4 for a SDH-provisioned GEn-port is allowed. This is due the implicit tributary mode for the GEn-ports, which are either fixed structured to STS1/VC3 (1,2,3 up to

21) in case of a SONET-GEN or STS3/VC4 (1,4,7 up to 19) in case of a SDH-GEN.

### **Behavior cct=1WAYPROT**

Path-protected cross-connections can be established via the ENT-CRS-mod command between tributaries of type:

- STS1-tribs: Tribs related to SDH/SONET ports (i.e. ports of OPn packs ) - the AID for these tribs being specified as STS1NumAID (refer to the AID definition) or
- VCG-tribs: Tribs related to VCG-ports (i.e. (logical) ports of GEN pack) - the AID for these tribs being specified as VCGNumAID (refer to the AID definition).

For *in\_aid* and *in\_aid2* only STS1-tribs are allowed.

All path protection group related parameters are only used in the context of ENT-CRS command in order to provide appropriate defaults for different applications (from operator perspective). Retrieval, Modification and reporting for these parameters is within entity protection group.

When establishing a cross-connection a entity of type cross-connection is created with the parameter values as

- specified in the ENT-CRS command.

Additionally when establishing a path-protected cross-connection a protection entity is created with the parameter values as

- specified in the ENT-CRS command,
- (for those parameter not part of ENT-CRS command) with the default-values.

### **Updated affected entities: General**

In case of establishing a path-protected cross-connection the command creates in addition an entity of type protection group (of type PATHDRI) with

- the attributes as entered in the ENT-CRS command and
- for those attributes not given by the command by its default values.

This creation is reported by means of an ENT-PROTN-GRP notification – refer to this notification for further details.

In case the *repleg* state is changed by establishing a cross-connection an ED-CRS notification is used to notify the updated *repleg* value.

**Updated affected entities: 1-way cross-connection, not resulting in a 2 way cross-connection**

In case a 1-way cross-connection is established where no "equivalent return-leg" (see below) is already existing one instance of type cross-connection is created with the entered parameter. This is reported by means of an ENT-CRS notification.

An "equivalent return-leg" means: when entering a 1-way cross-connection with rate N from in\_trib to out\_trib a return-leg would be given by

- a 1-way cross-connection from out\_trib to in\_trib
- with the same rate N
- and in (case of BLSR only) the same *loca* and *locz* values

Example:

```
ENT-CRS-vc4:Nename:1-1-#-#-3-4-1,1-1-#-#-7-3-1:586::1way;;
```

```
REPT DBCHG:
```

```
ENT-CRS-VC4:1-1-#-#-3-4-1,1-1-#-#-7-3-1:1WAY,:omode=NORM,  
xcappl=0,loca="\",locz="\",repleg=1WAY
```

**Updated affected entities: 1-way cross-connection, resulting in a 2-way cross-connection**

In case a 1-way cross-connection is established where an "equivalent return-leg" (see below) is already existing one instance of type cross-connection is created with the entered parameter and the repleg-parameter "2-way". This is reported by means of an ENT-CRS notification.

Furthermore as stated above the *repleg* status is updated for the already existing leg (i.e. in\_aid, out\_aid are flipped w.r.t. ENT request) and reported via an ED-CRS notification.

An "equivalent return-leg" means: when entering a 1-way cross-connection with rate N from in\_trib to out\_trib a return-leg would be given by

- a 1-way cross-connection from *out\_trib* to *in\_trib*
- with the same *rate* N
- and (in case of BLSR only) the same *loca* and *locz* values

Example (Precondition is specified in previous example):

```
ENT-CRS-vc4:Nename:1-1-#-#-7-3-1,1-1-#-#-3-4-1:587::1way;;
```

REPT DBCHG:

ENT-CRS-VC4:1-1-#-#-7-3-1,1-1-#-#-3-4-1:1WAY,:omode=NORM,  
xcappl=0, loca="\",locz="\",repleg=2WAY,rtnxcappl=0,  
xcnum=000000000,rtnxcnum=000000000, rtnomode=NORM

REPT DBCHG:

ED-CRS-VC4:1-1-#-#-3-4-1,1-1-#-#-7-3-1::repleg=2WAY:

Note that in the considered case the ENT-CRS notification for the 2-way cross-connection contains the same information as if it would result directly from an ENT-CRS with the *cct=2WAY*, i.e. the ENT-CRS notification for a *repleg=2WAY* cross-connection is independent from the way it is created (either direct via *cct=2WAY* or via two separated 1-way cross-connections) and it thus also contains the *rtnxcappl*, *rtnxcnum*, *rtnomode* parameters.

#### Updated affected entities: 2-way cross-connection

In case a 2-way cross-connection is established one instance of type cross-connection is created with the entered parameter and the *repleg=2WAY*.

This is reported by means of an ENT-CRS notification.

Example:

ENT-CRS-vc4:UNITE-NE:1-1-#-#-3-1-1,1-1-#-#-2-1-7:584::2way::

REPT DBCHG:

ENT-CRS-VC4:1-1-#-#-3-1-1,1-1-#-#-2-1-7:2WAY,:omode=NORM,  
xcappl=0, xcnum=000000000,rtnomode=NORM,locz="\",  
repleg=2WAY,rtnxcappl=0, rtnxcnum=000000000

#### Updated affected entities: path-protected cross-connection

In case a path-protected cross-connection is established two instances of type cross-connection is created (one for each leg) with the entered parameters and *repleg=1WAYPSW* and *repleg=1WAYPSP*, respectively.

Furthermore one instance of type protection group is created and notified via an ENT-PROTN-GRP notification.

For details on protection group and the related notifications please refer to the protection group section.

Example (path-protected SDH cross-connection i.e. no adaptive mode for non-BLSR):

```
ENT-CRS-vc3:NameOfNE:1-1-#-#-1-1-1,1-1-#-#-34-1-
1:123456::1WAYPPROT,1-1-#-#-2-1-1:ppgname="name1",
rme=ENABLE,snctype=SNCI,htmr=300,wtr=10;

REPT DBCHG:

ENT-CRS-VC3:1-1-#-#-1-1-1,1-1-#-#-34-1-1:1WAYPPROT,1-1-#-#-2-
1-1: omode=NORM,xcnum=000000000,xcappl=0,loca="",locz="",
repleg=1WAYPSW

REPT DBCHG:

ENT-CRS-VC3:1-1-#-#-2-1-1,1-1-#-#-34-1-1:1WAYPPROT,1-1-#-#-1-
1-1: omode=NORM,xcnum=000000000,xcappl=0,loca="",locz="",
repleg=1WAYPSP

REPT DBCHG:

ENT-PROTN-GRP:1-1-#-#-15-1-1::PATHDRI:ppgname="name1",
dripathpn=DEFAULT,htmr=300,protn=1-1-#-#-2-1-1,wkg=1-1-#-#-01-
1-1,rme=ENABLE,snctype=SNCI,wtr=10,htmr=300,<CML-BLOCK>

For details of the CML-Block please refer to the "ENT-PROTN-GRP
notification" (8-74) part.
```

## Example input/output

### Example 1

A non-BLSR 1-way cross-connection with rate vc4 between an OP10G (2.vc4) in slot 01 and an OP2G5 in slot 34 (3.port 3.VC4) will be established by:

```
ENT-CRS-VC4:UNITE-NE:1-1-#-#-10-1-4,1-1-#-#-34-3-
7:123456::1WAY;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

### Example 2

A 2-way Drop-cross-connection with rate vc44c between an OP10G (2.vc4-4c) in slot10 and an OP10G in slot 17 (1.vc4-4c) will be established – the OP10G in slot10 being in the BLSR.

```
ENT-CRS-ST512:UNITE-NE:1-1-#-#-10-1-13,1-1-#-#-17-1-
27:123456::2WAY:LOCA=NE-in-RING;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
```

;

### Example 3

A SDH path-protected cross-connection consisting of

- a working leg (1-1-#-#-10-1-1 -> 1-1-#-#-34-1-3) and
- a protection leg (1-1-#-#-11-1-1 -> 1-1-#-#-34-1-3) is established.  
None of the affected tributaries is in an BLSR.

The path protection is specified by

- a name (*ppgname*="Pathprot.Gr.Name.1"),
- the sncp-type (*snctype*=SNCI),
- the hold-off-timer-value (*htmr*=3000, i.e. 3 sec) and
- the wait-to-restore time (*wtr*=10, i.e. 10min).

```
ENT-CRS-STS12:UNITE-NE:1-1-#-#-10-1-1,1-1-#-#-34-1-3:
123456::1WAYPPROT,1-1-#-#-11-1-1:ppgname="Pathprot.Gr.
Name.1",rme=DISABLE,snctype=SNCI,htmr=3000,wtr=10;
    LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

## Error responses

### Validation rule: Entities must exist

Cross-connection command processing verifies the logical tributaries specified in the command do exist.

Error code: IENE - Input Entity Not Exists, Specified tributary/tributaries do not exist

### Validation rule: Only those parameter present which are needed

Cross-connection command processing verifies according to the given context only those parameter are present which are needed for that context. This means that e.g.

- for entering a 1-way cross-connection the *rtnomode* must not be present
- for entering a non path-protected cross-connection the *ppgname*, *htmr*, *wtr*, *snctype*, *rme* parameter must not be present.

Error code: IDNV - Input Data Not Valid, Parameter(s) present which are not allowed

**Validation rule: Both legs must have same rate**

Cross-connection command processing verifies that each logical AID specified in the command is consistent with the cross-connection rate. Consistency implies the following condition:

The rate of a new cross-connection from an input tributary that is in use for an existing cross-connection must match the rate of that existing cross-connection.

This can happen if to an existing leg with rate  $n$  a further leg is tried to establish with rate  $m \neq n$ .

Error code: IDNC - Input, Data, Not Consistent, Bridging rate is not compliant with existing leg

**Validation rule: AID boundary and rate consistency**

Cross-connection command processing verifies that each logical AID specified in the command is consistent with the cross-connection rate. Consistency implies the following condition:

- the boundary of the specified tributary is consistent with the specified rate.
- STS-1/VC-3 payloads can start at any position
- the first (STS-1 equivalent) tributary of an STS-3/VC-4 rate cross-connection must be on a  $\text{mod}3 + 1$  boundary (1, 4, 7, ...).
- the first STS-1 of an STS-12/VC-4-4c rate cross-connection must be on a  $\text{mod}12 + 1$  boundary (1, 13, 25, ...).
- the first STS-1 of an STS-48/VC-4-16c rate cross-connection must be on a  $\text{mod}48 + 1$  boundary (1, 49, 97, ...).
- the first STS-1 of an STS-192/VC-4-64c rate cross-connection must be on a  $\text{mod}192 + 1$  boundary (1, 193, 385, ...).

Error code: IDNC - Input, Data, Not Consistent, Tributary boundary is inconsistent with the indicated rate



**Validation rule: Tributary provisioning and rate consistency**

For fixed rate tributaries, cross-connection command processing verifies that

- if the port identified by logical input AID is provisioned to operate in the fixed signal rate mode, as determined by the tributary mode parameter, then the specified cross-connection rate is equivalent to the provisioned signal rate of the input tributary, as determined by the tributary input signal rate parameter.
- if the port identified by logical output AID is provisioned to operate in the fixed signal rate mode, as determined by the tributary mode parameter, then the specified cross-connection rate is equivalent to the provisioned signal rate of the output tributary, as determined by the tributary unequipped output signal rate parameter. Note that in both cases it does not matter if the tributary signal rate is given for the SONET- (STS3/STS12/...) or the SDH-interface standard (VC3/VC4..). As an example: It is possible to enter a cross-connection via ENT-CRS-VC4... between two tributaries related to tributary signal rates given by VC4/VC4 or by VC4/STS12 or by STS12/STS12; Thus the inputsig/unequippedsig-values for SDH (3, 4, 4c, 16c, 64c) are identical to those of SONET (1, 3, 12, 48, 192) seen from a cross-connection perspective.

Error code: IDNC - Input, Data, Not Consistent, Specified Tributary does not support the indicated rate

Note: In case of adaptive rate no consistency check is required.

**Validation rule: XC pack is (pre-)provisioned**

Cross-connection command processing verifies that at least one XC pack is pre-provisioned or provisioned.

Error code: SNVS - Status, Not in Valid State, XC Pack not provisioned

**Validation rule: Rate must not exceed half of the port rate (2f-BSLR only)**

Cross-connection command processing verifies that in case of a 2f-BLSR that the cross-connection rate does not exceed half the rate of the related port.

Note that this validation rule only applies in case of adaptive mode because for fixed-rate such a payload violation would already been denied in the context of the ED-*rr* command.

Error code: IDNC - Input, Data, Not Consistent, 2f-BSLR:  
rate exceeds half of the port rate

**Validation rule: path-protected cross-connection has unique input AIDs**

Cross-connection command processing verifies that for path-protected cross-connections the two input tributaries are unique i.e. the in\_aid has to be different from in\_aid2.

Error code: IDNV - Input Data Not Valid, Both input tributaries are identical

**Validation rule: path-protected cross-connection has inputs from ports with same interface standards**

Cross-connection command processing denies requests to establish path-protected cross-connections where the ports of the logical input tributaries are not provisioned for the same standard, either SONET or SDH – this is due to different switching criteria.

Error code: SNVS - Status, Not in Valid State, Different interface standards for input tributaries

**Validation Rule: No trib of any MSP port as in\_aid (for path-protected cross-connection)**

Cross-connection command processing shall verify that for path-protected cross-connections no tributary is used as *in\_aid* or *in\_aid2* if one of the related ports is a member of a 1+1 or 1:1 multiplex section/line protection group.

Error Code: SNVS - Status, Not in Valid State, trib of MSP 1+1/1x1 port as input-trib in pathprotected crossconnection

**Validation Rule: no multiple added XCs for MSSPRING TOP**

Cross-connection command processing shall verify that for path-protected cross-connections the output tributary and one of the two input tributaries are not a worker tributary of a port being a member of a BLSR/MS-SPRing protection group operating in TOP mode (i.e. protmode = 'SHORTENED' or 'TOPEX').

Error Code: SNVS - Status, Not in Valid State, multiple added XCs for MSSPRING TOP

**Validation rule: Supported MS-SPRing/BLSR DNI/DRI**

Cross-connection command processing verifies that for path-protected cross-connections the specified input/output tribs are an allowed/supported combination w.r.t. BLSR/MS-SPRing DRI/DNI.

Error code: SNVS - Status, Not in Valid State, unsupported MS - SPRing/BLSR DNI/DRI

**Validation rule: path-protected cross-connection: missing parameters**

Cross-connection command processing shall deny requests to establish path-protected cross-connections if one of the mandatory parameters *htmr*, *rme*, *snctype* or *wtr* is missing.

Error code: IPMS -Input, Parameter MiSSing, <parameter name> is missing

**Validation rule: path-protected cross-connection: both inputs in fixed-mode**

Cross-connection command processing denies requests to establish path-protected cross-connections where both ports of the logical input tributaries are not provisioned in fixed-mode. In other words if one or both inputs of a path-protected cross-connections are in adaptive-mode the command will be denied.

Error code: SNVS - Status, Not in Valid State, input port(s)for pathprot. crossconnecton in adaptive mode

The above listed validation rule is due to MUXnb00834, which, in short, states that adaptive-mode for path-protection cross-connection is not supported.

**Validation rule: No cross-connection loopback existing**

Cross-connection command processing denies commands requesting a cross-connection to a tributary with an existing cross-connection loopback.

Error code: SNVS - Status, Not in Valid State, Tributary has existing loopback.

Note: There is no command validation concerning facility loopback i.e. the cross-connection establishing is possible even with a facility loopback present.

**Validation Rule: No test access session**

Cross-connection command processing shall deny commands requesting a cross-connection to a tributary which is used in a test access session either as tributary under test or as test access tributary. The denial of the cross-connection request shall be independent whether the direction of the tributary (input or output) is used in the test access session or not.

Error Code: SNVS - Status, Not in Valid State, Tributary used in test access session

With this validation rule it is not allowed to add a 1-way cross-connection at a tributary where already another 1-way cross-connection exists in the other direction. This shall avoid cross-connection topology conversions.

**Validation rule: Restrict number of cross-connection using same input tributary**

Cross-connection command processing verifies that the number of cross-connections originating from the same tributary is restricted to two.

Error code: SNVS - Status, Not in Valid State, Too many cross-connection originating from same tributary

**Validation rule: TIDs consistent with existing cross-connection**

Cross-connection command processing verifies that for each leg of the cross-connection for which the logical input AID is used in any pre-existing cross-connection that the source TID is identical to that associated with the pre-existing cross-connection. This hold for BLSR cross-connections where both legs of a bridge must originate from the same NE.

Error code: SNVS - Status, Not in Valid State, TID inconsistent with existing cross-connection.

**Validation rule: Output not in use**

Cross-connection command processing verifies that logical output AID is not in use as a destination for an existing cross-connection.

Error code: SNVS - Status, Not in Valid State, Output is already crossconnected

**Validation rule: BLSR/MS-SPRing protection access (Extra Traffic)**

Cross-connection command processing shall deny commands requesting cross-connections to the protection tributaries of a port being a member of a BLSR/MS-SPRing protection group. Exception is when the protection group has the parameter attribute `protnmode = TOPEX`.

Error Code: SNVS - Status, Not in Valid State, Command refers to protection tributaries of a BLSR/MS-SPRing protection and no TOPEX application

**Validation rule: Corresponding loca/locz information is missing**

Cross-connection command processing shall deny commands, if affected tributaries are on ports in BLSR/MSSPRING groups, but corresponding loca/locz information is missing in the command.

Error code: IDNC - Input, Data Not Consistent, Corresponding loca/locz information is missing

**Validation rule: SNC Type Compliance**

Cross-connection command processing verifies the following when establishing a path-protected cross-connection:

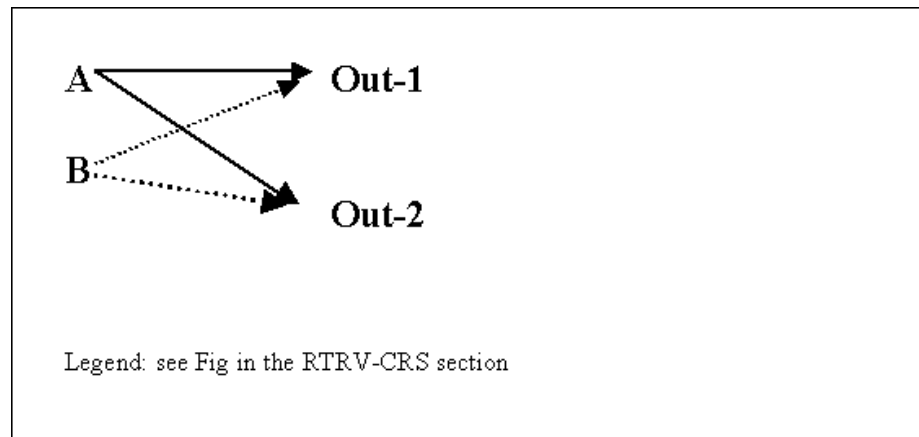
If there are any existing path protection groups that are *co-located* to the cross-connection to be established, then the SNC protection type parameter in the ENT-CRS command has the same value as the SNC protection type attribute of all of the *co-located* path protection groups.

A path protection group P is defined for this requirement to be *co-located* to a cross-connection C if any of the logical input tributaries of the cross-connections belonging to P are logical input tributaries of C – see the example below.

Error code: IDNC - Input, Data, Not Consistent, SNC Type not compliant with existing path-protected cross-connection

As an example consider the figure below: A path-protected cross-connection A, B → Out-1 may be established with the SNC-Type of e.g. SNCI; If then establishing another path-protected cross-connection A, B → Out-2, which has a common tributary (here

tributary A) with the former path-protected cross-connection, the SNC-Type of this new one has to be SNCI as well.



#### Validation rule: Rate consistency for VCG Tributaries

Cross-connection command processing shall verify that

- the specified cross-connection rate is equivalent to the signal rate of the input tributary, as determined by the tributary input signal rate parameter of the VCG port (parameter *inputsig*).
- the specified cross-connection rate is equivalent to the signal rate of the output tributary, as determined by the tributary unequipped output signal rate parameter of the VCG port (parameter *unequipsig*).

Note that in both cases it does not matter if the tributary signal rate is given for the SONET- (STS3/STS12/...) or the SDH-interface standard (VC3/VC4..). As an example: It is possible to enter a cross-connection via ENT-CRS-VC4... between two tributaries related to tributary signal rates given by VC4/VC4 or by VC4/STS12 or by STS12/STS12; Thus the signal rate values for SDH (3,4,4c,16c,64c) are identical to those of SONET (1,3,12,48,192) seen from a cross-connection perspective.

Error code: IDNC - Input Data Not Consistent, Specified Tributary does not support the indicated rate

#### Validation rule: No VCG-trib as *in\_aid* (for path-protected cross-connection)

Cross-connection command processing verifies that for path-protected cross-connection no VCG-trib is used as *in\_aid* or *in\_aid2*. The case

of path-protected cross-connection in conjunction with GEn only makes sense for both input-tribs (*in\_aid* and *in\_aid2*) being STS-tribs and the *out\_aid* being VCG-trib.

Error code: IDNC - Input Data Not Consistent, VGC-trib as input-trib in pathprotected crosconnection

**Validation rule: Maximum number of *ppgnames* exceeded**

Cross-connection command processing verifies that for path-protected cross-connection the maximum number of *ppgnames* is not exceeded if a new (not already used *as ppgname* for another protection group) is specified.

Error code: SSRE - Status, System Resources Exceeded, limit of *ppgnames* exceeded

**Related TL1 messages**

- “DLT-CRS: Delete cross-connection” (7-53)
- “ED-CRS: Edit Cross-connection” (7-46)
- “ENT-ROLL: Enter roll” (7-62)
- “RTRV-CRS: Retrieve cross-connection” (7-6)

**References** GR-199-CORE



## ENT-CRS notification

---

**Output format** The ENT-CRS notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ENT-CRS-*modifier:in\_aid,out\_aid:cct,[in\_aid2]:spec-block;*

### Output parameters

#### Command parameters

1. **modifier**  
See definition of input parameter *modifier* in “ENT-CRS: Enter cross-connection” (7-25).
2. **in\_aid** – Input Access Identifier  
See definition of output parameter *in\_aid* in “RTRV-CRS: Retrieve cross-connection” (7-6).
3. **out\_aid** – Output Access Identifier  
See definition of output parameter *out\_aid* in “RTRV-CRS: Retrieve cross-connection” (7-6).
4. **cct** – Cross-connection Topology  
See definition of input parameter *cct* in “ENT-CRS: Enter cross-connection” (7-25).
5. **in\_aid2** – Second Input Access Identifier  
See definition of output parameter *in\_aid2* in “RTRV-CRS: Retrieve cross-connection” (7-6).

#### Spec block parameters

1. **loca** – Location-a  
See definition of output parameter *loca* in “RTRV-CRS: Retrieve cross-connection” (7-6).
2. **locz** – Location-z  
See definition of output parameter *locz* in “RTRV-CRS: Retrieve cross-connection” (7-6).
3. **omode** – Output Mode  
See definition of output parameter *omode* in “RTRV-CRS: Retrieve cross-connection” (7-6).
4. **repleg** – Reported Leg Pair  
See definition of output parameter *repleg* in “RTRV-CRS: Retrieve cross-connection” (7-6).



5. **rtnomode** – Return Output Mode  
See definition of output parameter **rtnomode** in “RTRV-CRS: Retrieve cross-connection” (7-6).
6. **rtnxcappl** – Return Cross-connection Application  
See definition of output parameter **rtnxcappl** in “RTRV-CRS: Retrieve cross-connection” (7-6).
7. **rtnxcnum** – Return Cross-connection Number  
See definition of output parameter **rtnxcnum** in “RTRV-CRS: Retrieve cross-connection” (7-6).
8. **xcappl** – Cross-connection Application  
See definition of output parameter **xcappl** in “RTRV-CRS: Retrieve cross-connection” (7-6).
9. **xcnum** – Cross-connection Number  
See definition of output parameter **xcnum** in “RTRV-CRS: Retrieve cross-connection” (7-6).
10. **xconcls** – cross-connection class  
See definition of output parameter **xconcls** in “RTRV-CRS: Retrieve cross-connection” (7-6).

**Example output**

```
LT-UNITE-123 00-01-01 08:00:50
A 815 REPT DBCHG
"TIME=08-00-12,DATE=00-01-01:ENT-CRS-VC4:1-1-#-#-1-1-1,
1-1-#-#-2-1-1:2WAY,:lpbkstat=NO,omode=NORM,repleg=2WAY,
rtnomode=NORM,rtnxcappl=20,rtnxcnum=123456789,
xconcls=TRADITIONAL,xcappl=20,xcnum=123456789"
;
```

□

## ED-CRS: Edit Cross-connection

---

The ED-CRS-modifier command can be initiated by a user to modify the following cross-connection parameters:

- *loca/locz* in specifying the source-/destination TID associated with *in\_aid/out\_aid*
- *omode* specifying the output-mode of the cross-connection
- *xcappl* specifying the cross-connection application number of the cross-connection
- *xcnum* specifying the cross-connection number of the cross-connection.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: ED-CRS-*modifier:tid:in\_aid,out\_aid:ctag::spec\_block*;

### Input parameters

#### Command parameters

1. *modifier*

This parameter indicates the cross-connection on which the ED-CRS command acts on.

For detailed description please refer to the “RTRV-CRS: Retrieve cross-connection” (7-6) command.

Type: Alphanumeric value set.

Range:

- VC3
- VC4
- VC44C
- VC416C
- VC464C
- STS1

- STS3
- STS12
- STS48
- STS192.

No all value is supported.

2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. in\_aid – Input Access Identifier  
See definition of parameter *in\_aid* in “ENT-CRS: Enter cross-connection” (7-25).
4. out\_aid – Output Access Identifier  
See definition of parameter *out\_aid* in “ENT-CRS: Enter cross-connection” (7-25).
5. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

#### Spec block parameters

1. loca – Location-a  
See definition of output parameter *loca* in “RTRV-CRS: Retrieve cross-connection” (7-6).
2. locz – Location-z  
See definition of output parameter *locz* in “RTRV-CRS: Retrieve cross-connection” (7-6).
3. omode – Output Mode  
See definition of output parameter *omode* in “RTRV-CRS: Retrieve cross-connection” (7-6).
4. xcappl – cross-connection Application  
See definition of output parameter *xcappl* in “RTRV-CRS: Retrieve cross-connection” (7-6).
5. xcnum – cross-connection Number  
See definition of output parameter *xcnum* in “RTRV-CRS: Retrieve cross-connection” (7-6).

**Output format** If the ED-CRS command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
```

;

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of the “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

A cross-connection can be modified via the ED-CRS command when *xconcls*=TRADITIONAL. A privileged user may change *xconcls* to TRADITIONAL via ED-NNCRS.

The affected parameter, as listed in the *spec\_block* parameters part of this command, will be updated in the corresponding cross-connection entity.

For updates in more complex scenarios the following holds: -update of *omode* of one leg for a path-protected XC will also update *omode* of the second leg – thus 2 ED-CRS notifications will be sent; -update of *locz* of one leg within a path-protected XC will also update *locz* of the second leg -update of *loca* of one leg will also update *loca* of all other XCs sharing *in\_aid* as input.

Furthermore the *repleg* status will be updated to *loca/locz* change (conversion from 1-way to 2-way or vice versa).

**Updated affected entities**

Apart from the cross-connection entity no further entities are affected by the ED-CRS command.

**Example input/output**

Example: For an existing non-BLSR 1-way cross-connection with rate vc4 the omode will be set to AIS via:

```
ED-CRS-VC4:UNITE-NE:1-1-#-#-10-1-4,1-1-#-#-20-1-  
7:123456:::omode=AIS;  
LT-UNITE 00-11-14 12:00:00  
M 123456 COMPLD  
;
```

**Error responses**

**Validation rule: Entities (tributaries) must exist**

Cross-connection command processing verifies that the logical tributaries specified in the command do exist.

Error code: IENE - Input Entity Not Exists, Specified tributary/tributaries do not exist

**Validation rule: Entity (cross-connection) must exist**

Cross-connection command processing verifies that the specified cross-connection exists.

Error code: IENE - Input Entity Not Exists, Specified cross-connection does not exist

**Validation rule: Specified rate consistent with the cross-connection rate**

Cross-connection command processing verifies that the specified rate (*modifier* parameter) is compliant with the rate of the existing cross-connection.

Error code: IPNC - Input Parameter Not Consistent, Rate inconsistent with cross-connection rate

**Validation rule: TID validation**

Cross-connection command processing verifies that the new TID(s) (*loca* and/or *locz*) are compliant with the actual cross-connection configuration according to the following rules:

- *loca* shall be a non-empty string in case the *in\_aid* is involved in a BLSR protection group
- *locz* shall be a non-empty string in case the *out\_aid* is involved in a BLSR protection group
- *loca* shall be a empty string in case the *in\_aid* is not involved in a BLSR protection group
- *locz* shall be a empty string in case the *out\_aid* is not involved in a BLSR protection group.

Error code: IPNC - Input Parameter Not Consistent, TID not compliant with cross-connection configuration

**Validation rule: Presence of spec\_block parameter**

Cross-connection command processing shall verify that at least one spec\_block parameter is submitted with the command.

Error Code: IDNV - Input, Data Not Valid

**Validation rule: Cross-connection must not be of *xconcls* NN**

Cross-connection command processing shall verify, that the cross-connection is not of *xconcls* NN if other parameters than *loca* and *locz* are changed..

Error Code: SNVS - Status, Not in Valid State, Cross connection must not be of *xconcls* NN

**Validation rule: *loca/locz* information only retrievable for EXTRA TRAFFIC**

Cross-connection command processing shall deny commands, if affected tributaries belong to EXTRA TRAFFIC and *loca/locz* information is specified in the command. The *loca/locz* information is automatically created for EXTRA TRAFFIC by the NE.

Error Code: IDNC - Input, Data Not Consistent, It is not allowed to specify *loca/locz* for EXTRA TRAFFIC

**Related TL1 messages**

- “DLT-CRS: Delete cross-connection” (7-53)
- “ENT-CRS: Enter cross-connection” (7-25)
- “ENT-ROLL: Enter roll” (7-62)
- “RTRV-CRS: Retrieve cross-connection” (7-6)

**References** GR-199-CORE



## ED-CRS notification

---

**Output format** The ED-CRS notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: ED-CRS-*modifier*:*in\_aid*,*out\_aid*:[*in\_aid2*]:*spec-block*;

### Output parameters

#### Command parameters

1. *modifier*  
See definition of input parameter *modifier* in “ENT-CRS: Enter cross-connection” (7-25).
2. *in\_aid* – Input Access Identifier  
See definition of input parameter *in\_aid* in “ENT-CRS: Enter cross-connection” (7-25).
3. *out\_aid* – Output Access Identifier  
See definition of output parameter *out\_aid* in “RTRV-CRS: Retrieve cross-connection” (7-6).
4. *in\_aid2* – Second Input Access Identifier  
See definition of output parameter *in\_aid2* in “RTRV-CRS: Retrieve cross-connection” (7-6).

#### Spec block parameters

1. *loca* – Location-a  
See definition of output parameter *loca* in “RTRV-CRS: Retrieve cross-connection” (7-6).
2. *locz* – Location-z  
See definition of output parameter *locz* in “RTRV-CRS: Retrieve cross-connection” (7-6).
3. *omode* – Output Mode  
See definition of output parameter *omode* in “RTRV-CRS: Retrieve cross-connection” (7-6).
4. *repleg* – Reported Leg Pair  
See definition of output parameter *repleg* in “RTRV-CRS: Retrieve cross-connection” (7-6).
5. *rtntaccstat* – Return Test Access Status  
See definition of output parameter *rtntaccstat* in “RTRV-CRS: Retrieve cross-connection” (7-6).

6. **taccstat** – Test Access Status  
See definition of output parameter **taccstat** in “RTRV-CRS: Retrieve cross-connection” (7-6).
7. **xcappl** – cross-connection Application  
See definition of output parameter **xcappl** in “RTRV-CRS: Retrieve cross-connection” (7-6).
8. **xcnum** – cross-connection Number  
See definition of output parameter **xcnum** in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Note: **rtnxcappl**, **rtnxcnum** and **rtnomode** are not listed because these parameters are always in the scope of one leg.  
Note that in contrast to CG the ED-CRS notification is used to notify **repleg** changes - CG therefore did use the ENT-CRS notification which is not logical.
9. **xconcls** – cross-connection class  
See definition of output parameter **xconcls** in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Note: Modification can only be done by a privileged user via ED-NNCRS.

**Example output** Refer to the “Detailed behavior description” of “ED-CRS: Edit Cross-connection” (7-46).





## DLT-CRS: Delete cross-connection

---

The DLT-CRS-**modifier** command can be initiated by a user to delete a cross-connection in the NE.

The **modifier** in the DLT-CRS command indicates the cross-connection rate of the tributary for which the command is applied to.

There is no difference if the rate is specified as a SONET rate (STS1, STS3,..) or as SDH-rate (VC3, VC4,..) for the deletion of the cross-connection i.e. the DLT-CRS-**<sonet-rate>** yields to the same physical and logical behavior as DLT-CRS-**<sdh-rate>**.

No check is made if the modifier matches the interface-standard of the port i.e. if the port is provisioned as SONET (resp. SDH) and the rate is a SONET (resp. SDH) rate.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: DLT-CRS-**modifier:tid:in\_aid,out\_aid:ctag::[cct],[in\_aid2]**;

### Input parameters

#### Command parameters

1. **modifier**  
This parameter indicates the cross-connection on which the DLT-CRS command acts on.  
For detailed description please refer to the "RTRV-CRS: Retrieve cross-connection" (7-6) command.  
Type: Alphanumeric value set  
Range:
  - VC3
  - VC4
  - VC44C
  - VC416C
  - VC464C
  - STS1

- STS3
- STS12
- STS48
- STS192.

No use of the *all* value is allowed.

2. tid – Target Identifier  
Target Identifier. Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. in\_aid – Input Access Identifier  
See definition of parameter *in\_aid* in “ENT-CRS: Enter cross-connection” (7-25).
4. out\_aid – Output Access Identifier  
See definition of parameter *out\_aid* in “ENT-CRS: Enter cross-connection” (7-25).
5. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).
6. cct – cross-connection Topology  
This parameter specifies the topology of the cross-connection to be deleted via the DLT-CRS command.  
See definition of parameter *cct* in “ENT-CRS: Enter cross-connection” (7-25).
7. in\_aid2 – Input Access Identifier 2  
This parameter is applicable to path-protected cross-connections only and specifies the source of the protection leg. Thus *in\_aid* and *out\_aid* specify the working leg while *in\_aid2* and *out\_aid* specify the protection leg of a path-protected cross-connection.  
See definition of parameter *in\_aid2* in “ENT-CRS: Enter cross-connection” (7-25).

**Output format** If the DLT-CRS command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

Cross-connection can be deleted via the DLT-CRS command when *xconcls*=TRADITIONAL.

**Deletion of 2WAY cross-connections**

Please note that the 2 legs of a 2-way cross-connection can be deleted either via a single DLT-CRS command (with *cct*=2WAY) or via 2 separate DLT-CRS commands (each with *cct*=1WAY). In the latter case an additional *repleg* status change will be notified via an ED-CRS notification.

When deleting a cross-connection the cross-connection entity will be deleted as well. This deletion is notified via a DLT-CRS notification.

**Updated affected entities: General**

In case of deleting a path-protected cross-connection the command deletes in addition the entity of type protection group being related to that path-protected cross-connection. This deletion is notified via a DLT-PROTN-GRP notification. Please refer to the “DLT-PROTN-GRP notification” (8-106) section for details.

In case the *repleg* state is changed by deleting a cross-connection an ED-CRS notification is used to notify the updated *repleg* value.

**Updated affected entities: 1-way cross-connection, when not part of 2 way cross-connection**

In case a 1-way cross-connection is deleted where no “equivalent return-leg” (see below) is already existing the affected instance of the cross-connection is deleted. This is reported by means of an DLT-CRS notification.

An “equivalent return-leg” means: for a 1-way cross-connection with rate N from in\_trib to out\_trib a return-leg would be given by

- a 1-way cross-connection from out\_trib to in\_trib
- with the same rate N
- and in (case of BLSR only) the same *loca* and *locz* values.

Example:

DLT-CRS-vc3:NameOfNE:1-1-#-#-6-1-1,1-1-#-#-1-1-1:88::1way;

REPT DBCHG

DLT-CRS-VC3:1-1-#-#-6-1-1,1-1-#-#-1-1-1:1WAY;

**Updated affected entities: 1-way cross-connection, when part of a 2-way cross-connection**

In case a 1-way cross-connection is deleted where an "equivalent return-leg" (see below) exists the instance of type cross-connection, which represents the leg as specified in the DLT-CRS command shall be deleted.

This is reported by means of an DLT-CRS notification.

Furthermore the altered *repleg* status is reported via an ED-CRS notification.

An "equivalent return-leg" means: when entering a 1-way cross-connection with rate N from in\_trib to out\_trib a return-leg would be given by

- a 1-way cross-connection from out\_trib to in\_trib
- with the same rate N
- and in (case of BLSR only) the same *loca* and *locz* values.

Example (Precondition: 2-way cross-connection:1-1-#-#-7-3-1 ↔ 1-1-#-#-3-4-1 ):

DLT-CRS-vc4:NEnam:1-1-#-#-7-3-1,1-1-#-#-3-4-1:587::1way;

REPT DBCHG

DLT-CRS-VC4:1-1-#-#-7-3-1,1-1-#-#-3-4-1:1WAY;

REPT DBCHG

ED-CRS-VC4:1-1-#-#-3-4-1,1-1-#-#-7-3-1::repleg=1WAY;

**Updated affected entities: 2-way cross-connection**

In case a 2-way cross-connection is deleted its related instance of type cross-connection will be deleted as well.

This is reported by means of an DLT-CRS notification.

Example:

DLT-CRS-vc3:NameOfNE:1-1-#-#-6-1-1,1-1-#-#-1-1-1:88::2way;

REPT DBCHG

DLT-CRS-VC3:1-1-#-#-6-1-1,1-1-#-#-1-1-1:2WAY;

### Updated affected entities: path-protected cross-connection

In case a path-protected cross-connection is deleted the related instance of type cross-connection will be deleted as well. This is reported by means of one DLT-CRS notification where *in\_aid*, *in\_aid2* can be chosen as in the delete request or flipped.

Furthermore the related instance of protection group will be deleted as well.

This is reported by means of an DLT-PROTN-GRP notification.

For details on protection group please refer to the protection group section.

Example:

```
DLT-CRS-vc3:NameOfNE:1-1-##-1-1-1,1-1-##-15-1-1:92::1WAYPPROT,1-1-##-14-1-1;
```

```
REPT DBCHG
```

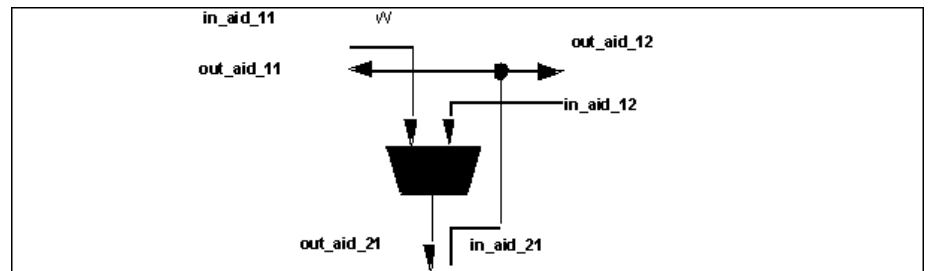
```
DLT-PROTN-GRP:1-1-##-15-1-1:PATHDRI;
```

```
REPT DBCHG
```

```
DLT-CRS-VC3:1-1-##-1-1-1,1-1-##-15-1-1:1WAYPPROT,1-1-##-14-1-1;
```

### Example input/output

Suppose the following compound cross-connection as depicted below is deleted: This would require the following DLT-CRS commands:



```
DLT-CRS-VC4:UNITE-NE:in_aid_11,out_aid_21:123456::  
1WAYPROT,in_aid_12;
```

```
LT-UNITE 00-11-14 12:00:00  
M 123456 COMPLD  
;
```

```
DLT-CRS-VC4:UNITE-NE:in_aid_21,out_aid_12:123457::1way;
```

```

LT-UNITE 00-11-14 12:01:00
M 123457 COMPLD
;

DLT-CRS-VC4:UNITE-NE:in_aid_21,out_aid_11:123458::1way;
LT-UNITE 00-11-14 12:02:00
M 123458 COMPLD
;

```

The first command will delete the path-protected cross-connection, while the following two commands delete the bridge.

## Error responses

### Validation rule: Valid topology

Cross-connection command processing verifies that the value of the topology parameter is consistent with the atomic cross-connection topology and the leg status of the existing cross-connection in accordance with the following table. Failure to meet this criteria (Validation Response = Deny) results in command rejection.

Error code: SNVS - Status, Not in Valid State, Invalid topology

| Topology in Remove cross-connection Command (TL1-parameter: <i>cc t</i> ) | Topology of Existing Atomic cross-connection (internal parameter: "Atomic cross-connection topology" as described in the RTRV-CRS section in the <i>repleg</i> context) | Leg Status of Existing Atomic cross-connection (internal parameter: "Leg status" as described in the RTRV-CRS section in the <i>repleg</i> context) | Validation Response ("Accept" means that the command is replied by a COMPLD, "Deny" means, that the command is rejected with the Error Code as stated above) |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1WAY                                                                      | point-to-point                                                                                                                                                          | 1-way                                                                                                                                               | Accept                                                                                                                                                       |
|                                                                           | point-to-point                                                                                                                                                          | 2-way                                                                                                                                               | Accept                                                                                                                                                       |
|                                                                           | path-protected                                                                                                                                                          | 1-way                                                                                                                                               | Deny                                                                                                                                                         |
| 2WAY                                                                      | point-to-point                                                                                                                                                          | 1-way                                                                                                                                               | Deny                                                                                                                                                         |
|                                                                           | point-to-point                                                                                                                                                          | 2-way                                                                                                                                               | Accept                                                                                                                                                       |
|                                                                           | path-protected                                                                                                                                                          | 1-way                                                                                                                                               | Deny                                                                                                                                                         |
| 1WAYPPROT                                                                 | point-to-point                                                                                                                                                          | 1-way                                                                                                                                               | Deny                                                                                                                                                         |
|                                                                           | point-to-point                                                                                                                                                          | 2-way                                                                                                                                               | Deny                                                                                                                                                         |
|                                                                           | path-protected                                                                                                                                                          | 1-way                                                                                                                                               | Accept                                                                                                                                                       |

This table should be understood as follows:

- 1. line: suppose a 1-way cross-connection exists with a point-to-point topology – then this cross-connection can be deleted with the DLT-CRS command including the input parameter *cct=1WAY* i.e. the command will be accepted and executed;
- 2. line: suppose a 2-way cross-connection exists with a point-to-point topology – then a DLT-CRS with *cct=1WAY* will be accepted and one leg will be deleted (the other in the return direction will still exist);
- 3. line: suppose a path-protected cross-connection exists which (also) has a leg status 1-WAY – then a DLT-CRS with *cct=1way* will be denied with the Error Code SNVS - Status, Not in Valid State, Invalid topology; to delete this cross-connection properly the last line has to be considered, where the *cct* is compliant with the atomic cross-connection topology and the leg status.

**Validation rule: Entities (tributaries) must exist**

Cross-connection command processing verifies the logical tributaries specified in the command do exist.

Error code: IENE - Input Entity Not Exists, Specified tributary/tributaries do not exist

**Validation rule: Entity (cross-connection) must exist**

Cross-connection command processing verifies that the specified cross-connection exists.

Error code: IENE - Input Entity Not Exists, Specified cross-connection does not exist

**Validation rule: Valid rate**

Cross-connection command processing verifies that the specified rate is equivalent to the rate of the existing cross-connection. Hereby the SONET-rates are treated identical to the SDH-rates (i.e. sts1/vc3, STS3/vc4 etc.)

Error code: IDNC - Input Data Not Consistent, Rate is inconsistent with existing cross-connection

**Validation rule: No cross-connection loopback existing**

Cross-connection command processing denies commands requesting a cross-connection to a tributary with an existing cross-connection loopback.

Error code: SNVS - Status, Not in Valid State, Tributary has existing loopback.

Note: As in the ENT-CRS command there is no command validation concerning facility loopback i.e. the cross-connection deletion will be possible even with a facility loopback present.

**Validation Rule: No test access session**

Cross-connection command processing shall deny commands requesting a cross-connection to a tributary which is used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, Tributary used in test access session

**Validation Rule: Cross-connection must not be of xconcls NN**

Cross-connection command processing shall verify, that the cross-connection is not of xconcls NN.

Error Code: SNVS - Status, Not in Valid State, Cross connection must not be of xconcls NN

**Related TL1 messages**

- “ED-CRS: Edit Cross-connection” (7-46)
- “ENT-CRS: Enter cross-connection” (7-25)
- “ENT-ROLL: Enter roll” (7-62)
- “RTRV-CRS: Retrieve cross-connection” (7-6)

**References** GR-199-CORE





## DLT-CRS notification

---

**Output format** The DLT-CRS notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: DLT-CRS-*modifier*:*in\_aid*,*out\_aid*:*cct*,[*in\_aid2*];

### Output parameters

#### Command parameters

1. *modifier*  
See definition of input parameter *modifier* in “DLT-CRS: Delete cross-connection” (7-53).
2. *in\_aid* – Input Access Identifier  
See definition of input parameter *in\_aid* in “ENT-CRS: Enter cross-connection” (7-25).
3. *out\_aid* – Output Access Identifier  
See definition of output parameter *out\_aid* in “RTRV-CRS: Retrieve cross-connection” (7-6)
4. *cct* – cross-connection Topology  
See definition of input parameter *cct* in “ENT-CRS: Enter cross-connection” (7-25).
5. *in\_aid2* – Input Access Identifier 2  
See definition of output parameter *in\_aid2* in “RTRV-CRS: Retrieve cross-connection” (7-6)

**Example output** Refer to the “Detailed behavior description” in “DLT-CRS: Delete cross-connection” (7-53).



## ENT-ROLL: Enter roll

---

The ENT-ROLL-*modifier* command can be initiated by a user to roll the input of a cross-connection from a given tributary to another tributary while leaving the output unchanged. The ENT-ROLL command can be modelled by a DLT-CRS (deleting the existing cross-connection) followed by a ENT-CRS (establishing the new cross-connection according to the specified new input-tributary). This also holds for path-protected cross-connections for which the input of one of the legs can be rolled via the ENT-ROLL command, while leading the output of the path selector unchanged.

The tributary to which the roll cross-connection is to be established does not need to be free of alarms/failure conditions – no check in advance will be made. The cross-connection will thus be established also in case of AIS-P, LOP-P, UNEQ etc. as is the case with a normal ENT-CRS command as well.

The *modifier* in the ENT-ROLL command indicates the cross-connection rate of the tributary for which the command is applied to. There is no difference if the rate is specified as a SONET rate (STS1, STS3,..) or as SDH-rate (VC3, VC4,..) for the deleting of the old and establishing of the new cross-connection i.e. the ENT-ROLL-*<sonet-rate>* yields to the same physical and logical behavior as ENT-ROLL-*<sdh-rate>*.

No check is made if the *modifier* matches the interface-standard of the port i.e. if the port is provisioned as SONET (resp. SDH) and the rate is a SONET (resp. SDH) rate.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3

Priority: 3

Abortable: No

**Input format** Command Syntax: ENT-ROLL-*modifier:tid:in\_aid,out\_aid:ctag:::spec\_block;*

## Input parameters

### Command parameters

1. modifier  
This parameter indicates the cross-connection on which the ENT-ROLL command acts on.  
For detailed description please refer to the “RTRV-CRS: Retrieve cross-connection” (7-6) command.  
Type: Alphanumeric value set.  
Range:
  - VC3
  - VC4
  - VC44C
  - VC416C
  - VC464C
  - STS1
  - STS3
  - STS12
  - STS48
  - STS192.No use of the all value is allowed.
2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. in\_aid – Input Access Identifier  
This parameter specifies the source of the cross-connection. See definition of parameter *in\_aid* in “ENT-CRS: Enter cross-connection” (7-25).
4. out\_aid – Output Access Identifier  
This parameter specifies the sink of the cross-connection. See definition of parameter *out\_aid* in “RTRV-CRS: Retrieve cross-connection” (7-6).
5. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

### Spec block parameters

1. **newinaid** – New Input Access Identifier  
This parameter specifies the source of the new cross-connection to be established after the existing one is deleted.  
Type: STS1NumAID (when using OPn packs ) or VCGNumAID (when using GEn).  
Range: n. a.  
No use of the all value within the *newinaid* is allowed.
2. **newloca** – New Location-a  
This parameter specifies the new source TID if the *newinaid* is in a BLSR protection group.  
See definition of *loca* parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).
3. **newppgname** – New Path protection group Name  
This parameter specifies the name of the new path protection group. This parameter is applicable if a leg of a path-protected cross-connection is rolled – the parameter in this case is optional and if not entered the default is used. For non path-protected cross-connection this parameter does not apply and is omitted.  
See definition of *ppgname* parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).
4. **xcappl** – cross-connection Application  
This parameter indicates one of the application that are supported for a compound cross-connection topology. This parameter is optional – if not entered the default is used.  
See definition of *xcappl* parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).
5. **xcnum** – cross-connection Number  
This parameter identifies each cross-connection leg in a specific compound cross-connection topology. This parameter is optional – if not entered the default is used.  
See definition of *xcnum* parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).

**Output format** If the ENT-Roll command completes successfully, then the following normal completion response is returned:

```
sid date time  
M ctag COMPLD
```

;

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

#### Behavior

Because the ENT-ROLL can be understood as a sequence consisting of a DLT-CRS operation followed by an ENT-CRS operation there does not exist a (separate) ENT-ROLL notification. Instead a DLT-CRS notification is sent, followed by an ENT-CRS notification. Furthermore additionally an ED-CRS notification is triggered by the ENT-ROLL command, when the *repleg* status is altered. Refer also to the section “DLT-CRS: Delete cross-connection” (7-53) and “ENT-CRS: Enter cross-connection” (7-25) behavior.

#### Transaction behavior

For the ENT-ROLL command a validation is performed before the COMPLD is returned. This means it has to be checked if the DLT-CRS (using the validation rules as stated in the DLT-CRS section) as well as the following ENT-CRS (by using the validation rules as stated in the ENT-CRS section) can be performed successfully, BEFORE the command is executed. With this approach it is guaranteed that the command either is rejected or succeeds as a whole by executing the deletion- AND the entering-operation.

#### Updated affected entities: 1-way, 2-way cross-connection

Refer to the section *Detailed behavior description* of the “ENT-CRS: Enter cross-connection” (7-25) and “DLT-CRS: Delete cross-connection” (7-53) commands for the affected entities.

### Updated affected entities: path-protected cross-connection

If one leg of path-protected cross-connection is rolled, the following updates takes place:

1. The path-protected cross-connection instance is deleted and this is notified via one DLT-CRS notification.
2. Two legs composing the path-protected XCs are created and this is notified via ENT-CRS notification. The initial values for the cross-connection legs are derived from:
  - the data of the deleted leg not specified in the roll request
  - the data as specified in the roll request; i.e. for the rolled leg the attributes: *loca,xcappl, xcnum*.
3. The attribute *wkg* (if worker leg is rolled) or *protn* (if protection leg is rolled) are updated (gets the value of the new input trib) for the associated path protection group. If in addition a new value for *ppgname* is specified, then the corresponding protection group is updated accordingly. These updates are reported by means of a ED-PROTN-GRP notification.

For details on protection group and the related notifications please refer to the protection group section.

Deletion of the leg non-affected by the roll command is needed, since also the *in\_aid2* attribute for this leg is changed. Attribute *in\_aid2* is considered as part of the key/identifier for the leg itself, and therefore the deletion and creation sequence is the only approach in order to notify the performed DB changes.

### Example input/output

#### Example 1:

Suppose the following existing non-BLSR 1-way vc3-cross-connection

1-1-#-#-1-1-3 → 1-1-#-#-5-1-17

shall be rolled to

1-1-#-#-2-1-3 → 1-1-#-#-5-1-17

also being a non-BLSR cross-connection. This would be accomplished via:

```
ENT-ROLL-VC3:UNITE-NE:1-1-#-#-1-1-3,1-1-#-#-5-1-17:123456::newinaid=1-1-#-#-2-1-3;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
```

;

### Example 2:

Suppose the following existing non-BLSR 1-way vc3-cross-connection:

1-1-#-#-1-1-3 → 1-1-#-#-5-1-17

shall be rolled to:

1-1-#-#-2-1-3 → 1-1-#-#-5-1-17

with the new tributary being involved in a BLRS protection group.

This would be accomplished via:

```
ENT-ROLL-VC3:UNITE-NE:1-1-#-#-1-1-3,1-1-#-#-5-1-17:123456:::newinaid=1-1-#-#-2-1-3,newloca=BLSR-pprot-name;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

### Example 3:

Suppose the following vc4 path-protected cross-connection exists:

worker-leg: 1-1-#-#-1-1-1 → 1-1-#-#-5-1-1

protection leg: 1-1-#-#-2-1-1 → 1-1-#-#-5-1-1

The worker leg now shall be rolled towards the new in\_aid:  
1-1-#-#-3-1-1:

This would be accomplished via:

```
ENT-ROLL-VC4:UNITE-NE:1-1-#-#-1-1-1,1-1-#-#-5-1-1:123456:::newinaid=1-1-#-#-3-1-1;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

### Error responses

The rolling of a crossconnection can be conceptually understood as the removal of one crossconnection leg followed by the establishment of a new crossconnection leg, with the restriction that the logical output tributary of both legs is the same. Therefore the validation rules for the ENT-ROLL command are as specified in the DLT-CRS section and the ENT-CRS.

This means that if the ENT-ROLL command would fail to meet a criteria as specified in the DLT-CRS section the same command denial would be the consequence. In an analog way if the ENT-ROLL command would fail to meet a criteria as specified in the ENT-CRS section the same command denial would be the consequence.

#### **Related TL1 messages**

- “DLT-CRS: Delete cross-connection” (7-53)
- “ED-CRS: Edit Cross-connection” (7-46)
- “ENT-CRS: Enter cross-connection” (7-25)
- “RTRV-CRS: Retrieve cross-connection” (7-6)

**References** GR-199-CORE





## CNVT-CCT: Convert cross-connection topology

---

**General** The CNVT-CCT-modifier command can be initiated by a user to convert between a 1-way point-to-point cross-connection and a path-protected cross-connection.

For a 1-way Point-to-Point to a path-protected conversion, the existing point-to-point cross-connection leg is converted into a single atomic path-protected cross-connection between the logical input AID of the existing point-to-point cross-connection, the specified protection logical input AID and logical output AID of the existing point-to-point cross-connection. The leg comprised of the AIDs of the existing point-to-point cross-connection shall be designated as the path protection group working leg at the time the cross-connection is converted.

If the command is applied to a 2-way cross-connection it will be split up automatically in two 1-way cross-connections. The command will be executed on the specified in\_aid to out\_aid direction, the reverse direction will remain unprotected. Refer also to chapter Detailed behaviour for more.

For a path-protected to a 1-way point-to-point conversion, it can be selected, which logical input AID of the existing legs (working leg or the protection leg) of the path-protected cross-connection shall stay as logical input AID of the created point-to-point cross-connection. This can be done by specifying the surviving leg of the existing path protection group as working leg at the time the cross-connection is converted.

The tributaries involved do not need to be free of alarms/failure conditions - no check in advance will be made. The cross-connection will thus be established also in case of AIS-P, LOP-P, UNEQ etc. as is the case with a normal ENT-CRS command as well.

The *modifier* in the CNVT-CCT command indicates the cross-connection rate of the tributary for which the command is applied to. The same rules as for ENT-CRS for path-protected cross-connections apply.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 3  
Abortable: No

**Input format**    Command Syntax: CNVT-CCT-*modifier*:*tid*:*in\_aid*,*out\_aid*:*ctag*::[*in\_aid2*]:*spec\_block*;

## Input parameters

### Command parameters

1.    *modifier*

This parameter indicates the cross-connection on which the CNVT-CCT command acts on.

For detailed description please refer to the “RTRV-CRS: Retrieve cross-connection” (7-6) command.

Type: Alphanumeric value set.

Range:

- VC3
- VC4
- VC44C
- VC416C
- VC464C
- STS1
- STS3
- STS12
- STS48
- STS192.

No use of the all value is allowed.

2.    *tid* – Target Identifier

Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.

3.    *in\_aid* – Input Access Identifier

This parameter specifies

- 1-way Point-to-Point to a Ppath-protected conversion: the source of the unprotected cross-connection respectively
- Path-protected to a 1-way point-to-point conversion: the AID of the input leg which shall stay as source of the created unprotected cross-connection.

See definition of parameter *in\_aid* in “ENT-CRS: Enter cross-connection” (7-25).

4. out\_aid – Output Access Identifier  
This parameter specifies the sink of the cross-connection. See definition of parameter *out\_aid* in “RTRV-CRS: Retrieve cross-connection” (7-6).
5. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).
6. in\_aid2 – Input2 Access Identifier  
This parameter specifies for a
  - 1-way point-to-point to a path-protected conversion: the protection input of the created path protected cross-connection
  - Path-protected to a 1-way point-to-point conversion: the AID of the input leg which shall be dropped.See definition of parameter *in\_aid2* in “ENT-CRS: Enter cross-connection” (7-25).

#### **Spec block parameters**

1. cct – CrossConnect Topology  
The parameter *cct* specifies the new cross-connection topology.  
Type: Alphanumeric value set.  
Range: 1WAY for one-way unprotected cross-connection;  
1WAYPPROT for one-way path-protected cross-connection.
2. htmr – Hold-Off Time  
See definition in output parameters section in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. newinaid – New Input Access Identifier  
This parameter specifies the source aid of the new leg when converting from a point-to-point to a path-protected cross-connect. For removing the path-protection this parameter does not apply and shall be omitted.  
Type: AID.  
Range: STS1NumAID.  
No use of the all value within the *newinaid* is allowed.

4. **newloca** – New Location-a  
This parameter specifies the new source TID if the newinaid is in a BLSR protection group. It specifies that add node which is related to the protection leg input. **newloca** will be stored as the **loca2** parameter.  
See definition of **loca** parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Only present if **in\_aid2** is BLSR.
5. **occt** – Original CrossConnect Topology  
The parameter cct specifies the original cross-connection topology.  
Type: Alphanumeric value set.  
Range: 1WAY for one-way unprotected cross-connection.  
1WAYPPROT for one-way path-protected cross-connection.
6. **ppgname** – Path Protection Group Name  
This parameter specifies the name of the path protection group to be established. For removing the path-protection this parameter does not apply and shall be omitted. See definition of **ppgname** parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).
7. **rme** – Protection Reversion  
See definition in output parameters section in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
8. **snctype** – SNC Protection Type  
See definition in output parameters section in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
9. **wtr** – Wait To Restore Time  
See definition in output parameters section in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

10. **xcappl** – cross-connection Application

This parameter indicates one of the application that are supported for a compound cross-connection topology. This parameter is optional – if not entered the default is used.

See definition of **xcappl** parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).

11. **xnum** – cross-connection Number

This parameter identifies each cross-connection leg in a specific compound cross-connection topology. This parameter is optional - if not entered and if converting to a path-protected cross-connection the value of the previous cross-connection, respectively to a not path-protected cross-connection the value of the working leg is used.

See definition of **xnum** parameter in “RTRV-CRS: Retrieve cross-connection” (7-6).

**Output format**

If the CNVT-CCT command completes successfully, then the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

The output parameters **sid**, **date**, **time**, and **ctag** included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

**Notification of cross-connection related changes**

Because the CNVT-CCT can be understood as a sequence consisting of a DLT-CRS operation followed by an ENT-CRS operation, a (separate) CNVT-CCT notification does not exist. Instead a DLT-CRS notification is sent, followed by an ENT-CRS notification.

Refer also to the section detailed behavior of DLT-CRS and ENT-CRS.

Keep in mind that the attribute **in\_aid2** is a part of the key / identifier for the path-protection group, and therefore the above described deletion and creation sequence is a proper approach in order to notify the performed DB changes.

The ENT-CRS notification includes already information about the changed repleg status.

### **Notification of protection group related changes**

The ENT-CRS operation affects subsequently also the protection area, i.e. in case of entering a path-protected cross-connection a path protection group will be established. Thus two independent notification are generated: ENT-CRS notification and a ENT-PROTN-GRP notification.

The DLT-CRS operation affects subsequently also the protection area, i.e. in case of removing a path-protected cross-connection a path protection group will be deleted. Thus two independent notification are generated: DLT-CRS notification and a DLT-PROTN-GRP notification.

### **Transaction behavior**

For the CNVT-CCT command the validation shall be performed before the COMPLD is returned. This means it has to be checked if the DLT-CRS as well as the following ENT-CRS can be performed successfully, before the entire command is executed. With this approach it shall be guaranteed that the command either is rejected or succeeds as a whole by executing the deletion- AND the entering-operation.

For the detailed validation rules refer to the chapter 'error responses' below.

### **Updated affected entities: 1way, 2way cross-connection, path-protected cross-connection**

The establishing of a path-protection group on a possibly existing 2-way cross-connection leads to a conversion to a 1-way path-protected cross-connection plus a separate 1-way cross-connection for the return direction. A similar split-up happens when deleting one direction of a 2-way cross-connection. Therefore refer to section "Detailed behaviour description" of the DLT-CRS notification.

After deletion of a path-protection group the remaining 1-way cross-connection may have an equivalent return leg. Then both will be merged in a 2-way cross-connection. A similar merge happens when a cross-connection is established to which already an equivalent return leg is existing. Therefore refer to section "Detailed behaviour description" of the ENT-CRS notification.

### Example input/output

#### Example 1:

Suppose the following existing non-BLSR 1way vc3-cross-connection

1-1-#-#-1-1-3 -> 1-1-#-#-5-1-17

shall be protected by the new leg

1-1-#-#-2-1-3 -> 1-1-#-#-5-1-17

also being a non-BLSR cross-connection. This would be accomplished via:

```
CNVT-CCT-VC3:UNITE-NE:1-1-#-#-1-1-3,1-1-#-#-5-1-17:123456:::
occt=1WAY,cct=1WAYPPROT,newinaid=1-1-#-#-2-1-3,
ppgname="group018",rme=ENABLE,snctype=SNCN,htmr=100,wtr=5;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

#### Example 2:

Suppose the following existing path-protected vc3-cross-connection:

1-1-#-#-1-1-3 -> 1-1-#-#-5-1-17 working leg

1-1-#-#-2-1-3 -> 1-1-#-#-5-1-17 protection leg

shall be changed into an unprotected cross-connection via the working leg. This would be accomplished via:

```
CNVT-CCT-VC3:UNITE-NE:1-1-#-#-1-1-3,1-1-#-#-5-1-17:123456::1-1-#-#-2-1-3:occt=1WAYPPROT,cct=1WAY;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

#### Example3:

Suppose the following existing path-protected vc3-cross-connection:

1-1-#-#-1-1-3 -> 1-1-#-#-5-1-17 working leg

1-1-#-#-2-1-3 -> 1-1-#-#-5-1-17 protection leg

shall be changed into an unprotected cross-connection via the protection leg. This would be accomplished via:

```
CNVT-CCT-VC3:UNITE-NE:1-1-#-#-2-1-3,1-1-#-#-5-1-17:123456::1-1-#-#-1-1-3:occt=1WAYPPROT,cct=1WAY;
```

```
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

### Error responses

The CNVT-CCT procedure can be conceptually understood as a sequence consisting of a DLT-CRS operation followed by an ENT-CRS operation. Therefore some of the validation rules of DLT-CRS and ENT-CRS shall apply also here. This means also that if one of the below listed CNVT-CCT validation rules would fail to meet a criteria the same or at least a similar command denial as specified in the DLT-CRS and the ENT-CRS section will be the consequence.

Validation rules relevant for path-protection which differ:

- check of provisioned topology parameters against existing atomic topology,
- check of existence of an cross-connection via the (future respectively current) working leg.

### Validation rule adaptation

In general the validation rules of DLT-CRS (as stated in the DLT-CRS section) and ENT-CRS (as stated in the ENT-CRS section) apply. However if an atomic cross-connection will remain finally unchanged then for this part no validation rule must be performed. The full list of validation rules from the DLT-CRS / ENT-CRS area is given in the following requirements.

In general the validation rules of DLT-CRS apply in case of removing a path-protection. However the check shall skip that the cross-connection of the working leg should have been removed before.

In general the validation rules of ENT-CRS apply in case of establishing a path-protection. However the check shall allow that a cross-connection via the working leg has already been set-up.

### Validation rule: Entities (tributaries) must exist

Cross-connection command processing shall verify the logical tributaries specified in the command do exist.

**Error Code:** IENE - Input, Entity Not Exists, Specified tributary/tributaries do not exist



Note the equivalence to the related ENT-CRS and DLT-CRS validation rules.

**Validation rule: Entity (cross-connection) must exist**

Cross-connection command processing shall verify that the specified cross-connection exists.

Error Code: IENE - Input, Entity Not Exists, Specified crossconnection does not exist

Note the equivalence to the related ENT-CRS and DLT-CRS validation rules.

**Validation rule: Topology conversion command must be consistent**

The spec block parameters *occt* and *cct* must be both provided and different.

Error Code: IDNC - Input, Data, Not Consistent, no allowed topology conversion

**Validation rule: Only those parameter present which are needed**

Cross-connection command processing shall verify according to the given context only those parameter are present which are needed for that context.

This means that for converting to a non path-protected cross-connection the following parameter must be present:

- *in\_aid2, cct, occt*

This means that for converting to a non path-protected cross-connection the following parameter must not be present:

- *htmr, newinaid, newloca, rme, snctype, wtr*

This means that for converting to a non path-protected cross-connection the following parameter may be present:

- *ppgname*

This means that for converting to a path-protected cross-connection the following parameters must be present:

- *cct, htmr, newinaid, newloca* (but only in cases of MSSPRING/BLSR, otherwise it must not be present), *occt, rme, snctype, wtr*

This means that for converting to a path-protected cross-connection the following parameter must not be present:

- *in\_aid2*

This means that for converting to a path-protected cross-connection the following parameter may be present:

- *ppgname*

Error code: SNVS - Status, Not in Valid State, Parameter(s) present which are not allowed

CNVT-CCT: ppgname usage:

It is not possible for CNVT-CCT to identify the path-protection group by the *ppgname* only. It has been excluded here. Reason: at least for a CNVT-CCT command with the order to create a protection group this is not sufficient to restrict it to a single cross-connection, as the *ppgname* may not be uniquely defined and therefore this might result in actions not desired by the operator.

**Validation rule: Valid rate**

Cross-connection command processing shall verify that the specified rate is equivalent to the rate of the existing cross-connection. Hereby the SONET-rates are treated identical to the SDH-rates (i.e. sts1/vc3, STS3/vc4 etc.)

Error Code: IDNC - Input, Data, Not Consistent, Rate is inconsistent with existing crossconnection

Note the equivalence to the related ED-CRS validation rule.

**Validation rule: Both legs must have same rate**

If converting to a path-protected cross-connection then the cross-connection command processing shall verify that the parameter newinaid specified in the command is consistent with the cross-connection rate, i.e. the rate of the tributary for the new leg must match the rate of the existing cross-connection.

Error Code: IDNC - Input, Data, Not Consistent, Bridging rate is not compliant with existing leg

For simplicity also the full validation rule of ENT-CRS may be executed.

### **Validation rule: New tributary rate validity**

If converting to a path-protected cross-connection then the cross-connection command processing shall verify that the specified cross-connection rate is equivalent to the provisioned signal rate of the new input tributary identified by *newinaid*, as determined by the tributary input signal rate parameter.

Note that it does not matter if the tributary signal rate is given for the SONET- (STS3/STS12/...) or the SDH-interface standard (VC3/VC4..).

As an example: It is possible to enter a cross-connection via ENT-CRS-VC4... between two tributaries related to tributary signal rates given by VC4/VC4 or by VC4/STS12 or by STS12/STS12; Thus the *inputsig/unequiposig*-values for SDH (3,4,4c,16c,64c) are identical to those of SONET (1,3,12,48,192) seen from a cross-connection perspective.

Error Code: IDNC - Input, Data, Not Consistent, Specified new Tributary does not support the indicated rate

For simplicity also the full validation rule of ENT-CRS may be executed.

### **Validation rule: path-protected cross-connection has unique input AIDs**

If converting to a path-protected cross-connection then the cross-connection command processing shall verify that for path-protected cross-connections the new input tributary identified by *newinaid* is different from *in\_aid*.

Error Code: IDNV - Input, Data Not Valid, Both input tributaries are identical

Note the equivalence to the related ENT-CRS validation rule.

### **Validation rule: path-protected cross-connection has inputs from ports with same interface standard**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error Code: SNVS - Status, Not in Valid State, Different interface standards for input tributaries

**Validation rule: No trib of 1+1 port protection as newinaid (for path-protected cross-connection)**

If converting to a path-protected cross-connection then the cross-connection command processing shall verify that the new tributary identified by newinaid is not a member of a 1+1 / 1:1 multiplex section/line protection group.

Error Code: SNVS - Status, Not in Valid State, trib of 1+1/1x1 port as input-trib in pathprotected crossconnection

For simplicity also the full validation rule of ENT-CRS may be executed.

**Validation rule: no multiple added XCs for MSSPRING TOP**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error code: SNVS - Status, Not in Valid State, multiple added XCs for MSSPRING TOP

**Validation rule: Supported MS-SPRing/BLSR DNI/DRI**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error Code: SNVS - Status, Not in Valid State, unsupported MS-SPRing/BLSR DNI/DRI

**Validation rule: path-protected cross-connection: parameters missing**

If converting to a pathprotected crossconnection then the according validation rule of ENT-CRS shall be executed.

Error code: IPMS -Input, Parameter MiSsing, <parameter name> missing

**Validation rule: path-protected cross-connection: both inputs in fixed-mode**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error Code: SNVS - Status, Not in Valid State, input port(s)for pathprot. crossconnecton in adaptive mode

**Validation rule: No cross-connection loopback existing**

If executing the CNVT-CCT command in order to establish a path protection then the new leg identified by the tributary newinaid must not have an existing cross-connection loopback.

Error Code: SNVS - Status, Not in Valid State, new Tributary has existing loopback

NOTE: There is no command validation concerning facility loopback i.e. the cross-connection establishing shall be possible even with a facility loopback present.

**Validation rule: Tributaries not used in a test access session when removing a path protection**

If executing the CNVT-CCT command in order to remove a path protection, then the tributaries of the remaining leg identified by *in\_aid* and *out\_aid*, shall not be involved in a test access session in either direction.

Error Code: SNVS - Status, Not in Valid State, tributaries used in test access session

**Validation rule: Restrict number of cross-connection using same input tributary**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error Code: SNVS - Status, Not in Valid State, Too many crossconnection originating from same tributary

**Validation rule: BLSR/MS-SPRing protection access (Extra Traffic)**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error Code: SNVS - Status, Not in Valid State, Command refers to protection tributaries of a BLSR/MS-SPRing protection and no TOPEX application

**Validation rule: SNC type compliance**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error Code: IDNC - Input, Data, Not Consistent, SNC Type not compliant with existing pathprotected crossconnection

**Validation rule: No VCG-trib as in\_aid (for pathprotected cross-connection)**

If converting to a path-protected cross-connection then the according validation rule of ENT-CRS shall be executed.

Error Code: IDNC - Input, Data, Not Consistent, VCG-trib as input-trib in pathprotected crossconnection

**Validation rule: Maximum number of *ppgname* exceeded**

If changing or entering the parameter *ppgname* then the according validation rule of ENT-CRS shall be executed.

Error Code: SSRE - Status, System Resources Exceeded, limit of ppgnames exceeded

**Validation rule: Cross-connection must not be of *xconcls* NN**

Cross-connection command processing shall verify, that the cross-connection is not of *xconcls* NN.

Error Code: SNVS - Status, Not in Valid State, Cross connection must not be of *xconcls* NN

**Related TL1 Messages**

- “DLT-CRS: Delete cross-connection” (7-53)
- “ENT-CRS: Enter cross-connection” (7-25)
- “ED-CRS: Edit Cross-connection” (7-46)
- “RTRV-CRS: Retrieve cross-connection” (7-6).



## Autonomous notification

---

### TID Change

#### ***loca*, *locz* auto notification for service traffic**

If a source TID (*loca*) or destination TID (*locz*) is changed due to a TID change of one NE within a BLSR ring/MS-SPRing, the update is reported by means of corresponding ED-CRS notifications.

#### **No auto notification for *loca* and *locz* change for extra traffic**

For extra traffic the *loca/z* info are generated automatically, for this reason they will change after an initialization or a recovery. Too many intermediate, void changes would be detected and notified.

#### **No notification for *sqfa* and *sqfz* change**

If a source TID (*loca*) or destination TID (*locz*) is changed due to a TID change of one NE within a MS-SPRing with the *protnmode* = TOPEX, the related parameters *sqfa* and *sqfz* will change to AINVALID respectively to MINVALID for an intermediate time, depending on internal processing speed and fault conditions of the ring. Finally they will again change to other values. Due to this transient behaviour it is only suitable to make it retrievable on demand.



# Tributary

## Overview

---

**Purpose** This section contains messages related to cross-connections on tributary level.

**Contents**

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| RTRV-LPBK: Retrieve loopback (here cross-connection loopback) | <a href="#">7-85</a>  |
| OPR-LPBK (here cross-connection loopback)                     | <a href="#">7-89</a>  |
| OPR-LPBK notification (here cross-connection loopback)        | <a href="#">7-96</a>  |
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## RTRV-LPBK: Retrieve loopback (here cross-connection loopback)

---

The RTRV-LPBK-*modifier* command can be initiated by a user to retrieve information on cross-connection loopback(s) in the NE.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): T1  
Priority: 1  
Abortable: Yes

**Input format**      Command Syntax: RTRV-LPBK-*modifier*:tid:aid:ctag;

### Input parameters

#### Command parameters

1.    modifier

This parameter indicates the rate of the currently active cross-connection loopback for the specified tributary on which the RTRV-LPBK command acts on.

For the adaptive rate case this means that the *modifier* does not specify the rate (constituent signal type) of the tributary, but the cross-connection loopback rate.

Type: Alphanumeric value set

Range:

- ALL
- VC3
- VC4
- VC44C
- VC416C
- VC464C
- STS1
- STS3
- STS12

RTRV-LPBK: Retrieve loopback (here cross-connection loopback)

- STS48
  - STS192.
2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
  3. aid – Access Identifier  
This parameter specifies the tributary for which loopback information is requested to be retrieved.  
Type: STS1NumAID (when using OPn packs ) or VCGNumAID (when using GEn).  
Range: The *all*-parameter is accepted for the slot-, port- and trib-part of the AID. For the port the *all*-parameter is to be distinguished between *all* when referring OPn packs, *vall* when referring the GEn.  
For example the following *aids* are valid:
    - 1-1-#-#-all-all-all specifying all tribs for all ports in the whole shelf
    - 1-1-#-#-2-1-all specifying all tribs of the first port of the pack in slot-number=02
    - 1-1-#-#-3-vall-all specifying all tribs of all ports of the (GEn) pack in slot-number=03.
  4. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

**Output format** Normal completion message

In response to a valid RTRV-LPBK-*modifier* command, the following output is returned:

```

sid date time
M ctag COMPLD
  "aid:rate:spec_block"
    ...
    ...
  "aid:rate:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8).

RTRV-LPBK: Retrieve loopback (here cross-connection loopback)

## Output parameters

### Command parameters

1. aid – Access Identifier  
This parameter specifies the tributary for which loopback information is retrieved.  
Type: STS1NumAID (when using OPn packs) or VCGNumAID (when using GEn).  
Range: No all-parameter are possible.
2. rate  
This parameter indicates the cross-connection rate. For a detailed description please refer to parameter *rate* in “RTRV-CRS: Retrieve cross-connection” (7-6).  
Type: Alphanumeric value set  
Range:
  - VC3
  - VC4
  - VC44C
  - VC416C
  - VC464C
  - STS1
  - STS3
  - STS12
  - STS48
  - STS192.

### Spec block parameters

1. crslpbkstat – cross-connection Loopback Status  
This parameter specifies the current cross-connection loopback status of the considered tributary *aid*.  
The value **YES** will be used in case the tributary is loop-backed.  
Note that the tributary does not need to be involved in a cross-connection – but can be in loopback also without cross-connection.  
Note that no dedicated value is specified for the case of a non loop-backed tributary since such a tributary will no be in output.  
Type: Alphanumeric value set.  
Range: YES.

RTRV-LPBK: Retrieve loopback (here  
cross-connection loopback)

**Detailed behavior  
description**

The RTRV-LPBK command allows the retrieval of loopback information for tributaries, regardless if they are involved in cross-connections or not. Tributaries which are not involved in a cross-connection loopback are not present in the reply output.

**Example Input/output****Example:**

The example shows the loopback status for the 13th trib of the pack in slot 07, which has an existing loopback:

```
RTRV-LPBK-VC3:UNITE-NE:1-1-#-#-7-1-13:123456
    sid date time
M   ctag COMPLD
    "1-1-#-#-7-1-13:STS1:crslpbkstate=YES"
;
```

**Related TL1 messages**

- “OPR-LPBK (here cross-connection loopback)” (7-89)
- “RLS-LPBK: Release loopback (here facility loopback)” (7-114)

**References** GR-199-CORE



## OPR-LPBK (here cross-connection loopback)

---

The OPR-LPBK-*modifier* command can be initiated by a user to establish a loopback on a tributary.

In this section only the loopback on tributaries is considered.

A cross-connection loopback consists of a cross-connection from an input tributary to an output tributary of the same tributary via the cross-connection fabric. Note that this loopback is possible on any logical tributary whether there is a cross-connection for that tributary or there is no cross-connection for that tributary (in this case the tributary is said to be "idle" – thus the naming cross-connection loopback might be slightly misleading – the naming cross-connection loopback should be understood in the sense that the cross-connection fabric is involved in this command and not in the sense that an existing cross-connection is looped back) After releasing the loopback the former, pre-existing cross-connections (if any) must be automatically re-established.

For setting a loopback on an existing cross-connection the command parameter *cmdmde* has to set to FRCD, else if the tributary is *idle* the *cmdmde* shall be NORM.

The *modifier* in the OPR-LPBK command indicates the rate on which the loopback command is applied to. There is no difference if the rate is specified as a SONET rate (STS1, STS3,..) or as SDH-rate (VC3, VC4,..) i.e. the OPR-LPBK-*<sonet-rate>* yields to the same physical and logical behavior as OPR-LPBK-*<sdh-rate>*. No check is made if the *modifier* matches the interface-standard of the port i.e. if the port is provisioned as SONET (resp. SDH) and the rate is a SONET (resp. SDH) rate.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): T4  
                      Priority: 1  
                      Abortable: No.

**Input format**      Command Syntax: OPR-LPBK-*modifier:tid:aid:ctag::,,lpbktyp[:spec\_block]*;

## Input parameters

### Command parameters

1. modifier  
This parameter indicates the tributary- respectively cross-connection-rate on which the OPR-LPBK command acts on.  
For detailed description please refer to the “RTRV-CRS: Retrieve cross-connection” (7-6) command  
Type: Alphanumeric value set  
Range:
  - VC3
  - VC4
  - VC44C
  - VC416C
  - VC464C
  - STS1
  - STS3
  - STS12
  - STS48
  - STS192.No use of the all value is allowed.
2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. aid – Access Identifier  
This parameter specifies the tributary for which the loopback is requested. See definition of input parameter *aid* in “RTRV-LPBK: Retrieve loopback (here cross-connection loopback)” (7-85).
4. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).
5. lpbktyp – Loopback Type  
This parameter specifies the type of loopback to be operated. In case of a tributary loopback (either with or without cross-connection) this parameter will be set to CRS.  
Type: alphanumeric value string.  
Range: CRS.

### Spec block parameters

1. *cmdmde* – Command Mode

This parameter specifies the command execution mode. If the tributary is involved in a cross-connection the parameter shall be set to FRCD, else if the tributary is idle (i.e. non cross-connected) *cmdmde* shall be set to NORM.

The difference is mainly that in case of an existing cross-connection (*in\_aid* → *out\_aid*) the counterpart (i.e. the *out\_aid*) which formerly delivered traffic will be set to AIS by the loopback operation.

Type: Alphanumeric value string.

Range:

- NORM (default)
- FRCD.

### Output format

If the OPR-LPBK command completes successfully, then the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

Loopback on tributaries can be switched via the OPR-LPBK command. The parameters *crslpbkstat* and *crslpbkrate* of the entity tributary are updated: – *crslpbkstat* is updated to YES, – *crslpbkrate* is updated to the entered value as given by the *modifier* parameter.

This update is reported by an ED-*rr* (*rr* being either VC3 or STS1) notification for normal tributaries and by an ED-VCGTRIB notification for virtual concatenation tributaries.

### Updated affected entities

Apart from the tributary entity no further entities are affected by the OPR-LPBK command.

Example:

```
OPR-LPBK-VC4:UNITE-NE:1-1-#-#-1-1-4:123456:,,,CRS;  
REPT DBCHG
```

ED-VC3:1-1-#-#-1-1-4::crslpbkstat=YES,crslpbkrate=VC4;

When using the loopback possibility for VCG-tribs it is in the operators responsibility to ensure that the complete bundle of VCG-tribs (building the VCG) are looped. Otherwise parts of the traffic will be missing.

## Example input/output

### Example 1:

Suppose the following aid 1-1-#-#-1-1-4 is *in\_aid* of a cross-connection.

The following command will set a loopback for that tributary.

```
OPR-LPBK-VC4:UNITE-NE:1-1-#-#-1-1-4:123456::,, ,CRS:
cmdmde=FRCD;
    UNITE-NE 00-11-14 12:00:00
M 123456 COMPLD
;
```

### Example 2:

Suppose the following aid 1-1-#-#-1-1-4 is not cross-connected.

The following command will set a loopback for that tributary.

```
OPR-LPBK-VC4:UNITE-NE:1-1-#-#-1-1-4:123456::,, ,CRS;
    UNITE-NE 00-11-14 12:00:00
M 123456 COMPLD
;
```

## Error responses

### Validation rule: Valid rate

Loopback command processing verifies that the specified rate is equivalent to the rate of the existing cross-connection. Hereby the SONET-rates are treated identical to the SDH-rates (i.e. sts1/vc3, STS3/vc4 etc.).

**Error code:** IDNC - Input Data Not Consistent, Rate is inconsistent with existing cross-connection



**Validation rule: Valid loopback type**

Loopback command processing verifies that the parameter and *lpbktyp* match i.e. for a tributary loopback the modifier must be present, the aid must specify a tributary and the *lpbktyp* must be CRS.

Error code: IDNC - Input Data Not Consistent, Inconsistent loopback type w.r.t. aid

**Validation rule: Loopback must not already exist**

Loopback command processing verifies that the loopback command can not be applied to an already existing loopback.

Error code: SAOP - Status already operated, loopback already exists

**Validation rule: No test access session**

Loopback command processing shall deny commands requesting a loopback at a tributary which is used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, Tributary used in test access session

**Validation rule: AID boundary and rate consistency**

Loopback command processing verifies that the logical AID specified in the command is consistent with the modifier rate. Consistency implies the following condition:

- The boundary of the specified tributary is consistent with the specified rate.
- STS-1/VC-3 payloads can start at any position.
- The first (STS-1 equivalent) tributary of an STS-3/VC-4 rate cross-connection must be on a  $\text{mod}3 + 1$  boundary (1, 4, 7, ...).
- The first STS-1 of an STS-12/VC-4-4c rate cross-connection must be on a  $\text{mod}12 + 1$  boundary (1, 13, 25, ...).
- The first STS-1 of an STS-48/VC-4-16c rate cross-connection must be on a  $\text{mod}48 + 1$  boundary (1, 49, 97, ...).
- The first STS-1 of an STS-192/VC-4-64c rate cross-connection must be on a  $\text{mod}192 + 1$  boundary (1, 193, 385, ...).

Error code: IDNC - Input Data Not Consistent, Tributary boundary is inconsistent with the indicated rate

### Validation rule: Tributary provisioning and rate consistency

For fixed rate tributaries, loopback command processing verifies that

- If the port identified by logical input AID is provisioned to operate in the fixed signal rate mode, as determined by the tributary mode parameter, then the specified modifier rate is equivalent to the provisioned signal rate of the input tributary, as determined by the tributary input signal rate parameter.
- This also holds for the output tributary, which must match the input tributary in the sense of equivalence of modifier rate with the output signal rate. Note that in both cases that SDH- and SONET tributary signal rates are treated identical (from the loopback perspective) i.e. there is no difference if the SDH values or the SONET values (for the inputsig- and unequiposig-parameters) are used for the tributary signal rate as long as those rates are compatible (i.e. vc3/sts1, vc4/sts3 etc.).

Error code: IDNC - Input Data Not Consistent, Specified Tributary does not support the indicated rate

Note: In case of adaptive rate no consistency check is required

### Validation rule: cmdmde matches cross-connection non-/existence

Loopback command processing will verify that

- in case no cross-connection exists the *cmdmde* must be NORM
- in case a cross-connection exists the *cmdmde* must be FRCD.

In the other cases

- no cross-connection and *cmdmde*=FRCD and
- cross-connection and *cmdmde*=NORM a rejection takes place.

Error code: IDNC - Input Data Not Consistent, cross-connection-existence not consistent with cmdmde-value

### Validation rule: No loopbacks on tributaries below ports of portClass INNI

Loopback command processing shall verify that the tributary does not belong to a port of *portClass* INNI.

Error Code: SNVS - Status, Not in Valid State, Port must not be of portClass INNI

Tributary  
OPR-LPBK (here cross-connection  
loopback)

*TL1 messages - transmission and cross-connect  
handling*

### **Related TL1 messages**

- “RLS-LPBK: Release loopback (here facility loopback)” (7-114)
- “RTRV-LPBK: Retrieve loopback (here facility loopback)”  
(7-102)

**References** GR-199-CORE



## OPR-LPBK notification (here cross-connection loopback)

---

There will be no OPR-LPBK notification because the changes (for the parameter *crslpbkstat* and *crslpbkrate*) caused by an OPR-LPBK command will be notified via an ED-*rr* (*rr* either VC3 or STS1) notification for normal tributaries and by an ED-VCGTRIB notification for virtual concatenation tributaries.



## RLS-LPBK: Release loopback (here cross-connection loopback)

---

The RLS-LPBK-*modifier* command can be initiated by a user to release a loopback on a tributary.

In this section only the loopback on tributaries are considered.

The *modifier* in the RLS-LPBK command indicates the rate on which the loopback command is applied to. There is no difference if the rate is specified as a SONET rate (STS1, STS3,..) or as SDH-rate (VC3, VC4,..) for the i.e. the RLS-LPBK-<*sonet-rate*> yields to the same physical and logical behavior as RLS-LPBK-<*sdh-rate*>. No check is made if the *modifier* matches the interface-standard of the port i.e. if the port is provisioned as SONET (resp. SDH) and the rate is a SONET (resp. SDH) rate.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T4  
Priority: 1  
Abortable: No

**Input format** Command Syntax: RLS-LPBK-*modifier*:*tid*:*aid*:*ctag*;

### Input parameters

#### Command parameters

1. *modifier*  
See definition of parameter *modifier* in “OPR-LPBK: Operate loopback (here facility loopback)” (7-107).
2. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. *aid* – Access Identifier  
See definition of parameter *aid* in “OPR-LPBK: Operate loopback (here facility loopback)” (7-107).
4. *ctag* – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

**Output format** If the RLS-LPBK command completes successfully, then the following normal completion response is returned:

sid date time

RLS-LPBK: Release loopback (here  
cross-connection loopback)

```
M  ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behavior description

Existing loopback on tributaries can be released via the RLS-LPBK command. The attribute *crslpbkstat* of the entity tributary shall be updated to NO.

This update is reported by an ED-*rr* (*rr* being either VC3 or STS1) notification for normal tributaries and by an ED-VCGTRIB notification for virtual concatenation tributaries.

#### Updated affected entities

Apart from the tributary entity no further entities are affected by the RLS-LPBK command.

#### Example input/output

```
RLS-LPBK-vc3:UNITE-NE:1-1-#-#-1-1-4:123456;
    UNITE-NE 00-11-14 12:00:00
M  123456 COMPLD
;
```

#### Error responses

##### Validation rule: Valid rate

Loopback command processing verifies that the specified rate is equivalent to the rate of the existing loopback. Hereby the SONET-rates are treated identical to the SDH-rates (i.e. sts1/vc3, STS3/vc4 etc.).

**Error code:** IDNC - Input Data Not Consistent, Rate is inconsistent with existing cross-connection

##### Validation rule: Loopback must exist

Loopback command processing verifies that the RLS-LPBK command can not be applied to non-existing loopback.

**Error code:** SNVS - Status, Not in Valid State, loopback does not exist.

Tributary

*TL1 messages - transmission and cross-connect  
handling*

RLS-LPBK: Release loopback (here  
cross-connection loopback)

### **Related TL1 messages**

- “OPR-LPBK: Operate loopback (here facility loopback)” (7-107)
- “RTRV-LPBK: Retrieve loopback (here facility loopback)”  
(7-102)

**References** GR-199-CORE



## RLS-LPBK notification (here cross-connection loopback)

---

There will be no RLS-LPBK notification because the changes (for the parameter *crslpbkstat* and *crslpbkrate*) caused by an RLS-LPBK command will be notified via an ED-*rr* (*rr* being either VC3 or STS1) notification for normal tributaries and by an ED-VCGTRIB notification for virtual concatenation tributaries.





# Port

## Overview

---

**Purpose** This section contains messages related to cross-connections on port level.

**Contents**

|                                                       |                       |
|-------------------------------------------------------|-----------------------|
| RTRV-LPBK: Retrieve loopback (here facility loopback) | <a href="#">7-102</a> |
| OPR-LPBK: Operate loopback (here facility loopback)   | <a href="#">7-107</a> |
| OPR-LPBK notification (here facility loopback)        | <a href="#">7-113</a> |
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## RTRV-LPBK: Retrieve loopback (here facility loopback)

---

The RTRV-LPBK-*modifier* command can be initiated by a user to retrieve information on facility loopback(s) in the NE. Facility herein is identical to port – either an optical port of an OPn pack or the optical port of a GEn pack – no other ports (like timing ports, UserByte ports etc) are settable to loopback.

As long as there is loopback active on a port the abnormal LED lits.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-LPBK-*modifier:tid:aid:ctag;*

### Input parameters

#### Command parameters

1. modifier

This parameter indicates the port rate on which the RTRV-LPBK command acts on.

(In principle this parameter is redundant, because the port-rate is implicitly given by the port-AID (*SPortAID*), but in order to align the facility loopback command with the tributary loopback command this parameter is retained.)

Type: Alphanumeric value set

Range:

- ALL
- STM1E
- STM1
- STM4
- STM16
- STM64
- STM256
- OC3
- OC12

RTRV-LPBK: Retrieve loopback (here  
facility loopback)

- OC48
  - OC192
  - OC768
  - 1GE.
2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
  3. aid – Access Identifier  
This parameter specifies the port for which loopback information is requested to be retrieved.  
Type: SPortAID (when using OPn packs ) or EPortAID (when using GEn).  
Range: The all-parameter is accepted for the slot-, port-part of the AID.  
For example the following *aid* s are valid:  
1-1-#-#-all-all specifying all ports in the whole shelf  
1-1-#-#-2-1 specifying the first port of the pack in slot-number=02
  4. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

**Output format** In response to a valid RTRV-LPBK command, the following output is returned:

```

    sid date time
M ctag COMPLD
    "aid:rate:spec_block"
    ...
    ...
    "aid:rate:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
This parameter indicates the id of the port for which the loopback state is returned.  
Type: SPortAID (when using OPn packs ) or EPortAID (when using GEn)  
Range: No all is allowed.
2. rate  
This parameter indicates the port *rate*.  
Type: Alphanumeric value set  
Range:
  - STM1E
  - STM1
  - STM4
  - STM16
  - STM64
  - STM256
  - OC3
  - OC12
  - OC48
  - OC192
  - OC768
  - 1GE.

### Spec block parameters

1. lpbk – Loopback  
This parameter specifies the current near-side loopback status of the output *aid*. A near-side loopback means that the signal on the incoming port is looped to the outgoing port.  
If *lpbk*=YES then the port is (near-side) loop-backed.  
If *lpbk*=NO then there is no (near-side) loopback existing for the port.  
Note: At most one loopback (*lpbk* or *fsflpbkstat*) can be set to YES for the same port at the same time.  
Type: Alphanumeric value set.

RTRV-LPBK: Retrieve loopback (here facility loopback)

Range:

- YES
- NO (default).

## 2. fsflpbkstat – Far-Side-Facility-Loopback-Status

This parameter specifies the current far-side facility loopback status of the output *aid*. A far-side loopback means that the signal on the outgoing port is looped to the incoming port – this would thus correspond to loop via an external fibre cable, connecting the out-port with the in-port.

If *fsflpbkstat*=YES then the port is (far-side) loop-backed. If *fsflpbkstat*=NO then there is no (far-side) loopback existing for the port.

Note: At most one loopback (*lpbk* or *fsflpbkstat*) can be set to YES for the same port at the same time.

Type: Alphanumeric value set.

Range:

- YES
- NO (default).

### Detailed behavior description

The RTRV-LPBK command allows the retrieval of near-side and far-side loopback information for ports.

For the GEn the *lpbk* parameter is always set to NO due to the fact that the GE (EPort) only allows the far-side loopback possibility.

### Example input/output

Suppose the port 1 of the pack in slot 7 has a existing near-side loopback:

```
RTRV-LPBK-ALL:UNITE-NE:1-1-#-#-7-1:123456
sid date time
M ctag COMPLD
"1-1-#-#-7-1:0C48:lpbk=YES,fsflpbkstat=NO"
;
```

### Error responses

#### Validation rule: Modifier consistent with given port-rate

Loopback command processing verifies that the *modifier* parameter is consistent with the rate of the port (given by the input *aid* parameter).

Port  
RTRV-LPBK: Retrieve loopback (here  
facility loopback)

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handling

E.g. for an OP2G5 only the *modifier* values STM16 or OC48 (depending on the port's interface standard) are allowed, for an OP10 only *modifier* values STM64 or OC192 (depending on the port's interface standard) are allowed etc.

Error code: IDNC - Input Data Not Consistent, modifier is inconsistent with existing port rate.

**Validation rule: Modifier consistent with given port's interface standard**

Loopback command processing verifies that the *modifier* parameter is consistent with the interface standard of the port (given by the *aid* parameter). E.g. for an SDH port only the *modifier* values for STM16 or STM64 or STM256 are valid, for a SONET port only the *modifier* values OC48 or OC192 or OC768 are valid.

Error code: IDNC - Input Data Not Consistent, modifier is inconsistent with existing interface standard.

**Related TL1 messages**

- “OPR-LPBK: Operate loopback (here facility loopback)” (7-107)
- “RLS-LPBK: Release loopback (here facility loopback)” (7-114)

**References** GR-199-CORE



## OPR-LPBK: Operate loopback (here facility loopback)

---

For the GE-pack only a far-side facility loopback for the EPort shall be allowed - an OPR-LPBK for the EPort to switch a near-side facility loopback shall be denied.

The OPR-LPBK command can be initiated by a user to establish a loopback on an OPn port in the NE.

Two types of facility loopback can be distinguished:

- a near-side facility loopback which means that signal on the in-port is looped to the out-port and
- a far-side facility loopback, which means that the signal on the out-port is looped back to the in-port.

Switching a facility loopback has no restrictions to existing cross-connections loopbacks or cross-connections, i.e. facility loopbacks are assumed to precede over already existing cross-connection loopbacks. When a facility loopback is released the previously existing cross-connection loopback(s) will show up again.

Note that as safeguard for unintentional corruption of traffic the switching of a facility loopback will only be possible if the affected port's service condition is set to out of service (*servicecond* = OUTOFSERVICE) – this can be achieved via the ED-*rr* command.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T4  
Priority: 1  
Abortable: No

**Input format** Command Syntax: OPR-LPBK-*modifier:tid:aid:ctag::,,lpbktyp*;

### Input parameters

#### Command parameters

1. *modifier*  
This parameter indicates the port rate on which the OPR-LPBK command acts on.  
Type: Alphanumeric value set.  
Range:
  - STM1E
  - STM1

Port  
OPR-LPBK: Operate loopback (here facility  
loopback)

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handling*

- STM4
- STM16
- STM64
- STM256
- OC3
- OC12
- OC48
- OC192
- OC768
- 1GE.

No use of the all value is allowed.

2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. aid – Access Identifier  
This parameter specifies the port for which the loopback is requested. See definition of output parameter *aid* in RTRV-LPBK.
4. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).
5. lpbktyp – Loopback Type  
This parameter specifies the type of loopback to be operated. In case of a facility loopback this parameter shall be set to
  - FACILITY for a near-side facility loopback
  - FSF for a far-side facility loopback.Type: Alphanumeric value string.  
Range:
  - FACILITY
  - FSF.

**Output format** If the OPR-LPBK command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```



OPR-LPBK: Operate loopback (here facility  
loopback)

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

#### Behavior – OPn Port

Loopback on OPn ports can be switched via the OPR-LPBK command.

The attribute *lpbk* and *fsflpbkstat* of the entity port are updated by this command:

- *lpbk* should be set to YES in case the *lpbktyp*=FACILITY
- *fsflpbkstat* should be set to YES in case the *lpbktyp*=FSF.

This update is reported by an ED-*rr* notification for an OPn port (*rr* specifying the affected port, i.e. OC<M>/ STM<N>).

#### Behaviour - EP155 Port

Loopback on EPn ports can be switched via the OPR-LPBK command.

The attribute *lpbk* and *fsflpbkstat* of the entity port shall be updated by this command:

- *lpbk* should be set to YES in case the *lpbktyp*=FACILITY
- *fsflpbkstat* should be set to YES in case the *lpbktyp*=FSF.

This update shall be reported by an ED-*rr* notification for an EP155 port (*rr* specifying the affected port STM1E).

In case of a EP155 protection group the command is only applicable for the ports of the worker unit. Reason: Ports of the protection card are removed by creation of the protection group.

#### Behavior – GE1 Port

Loopback on GE1 ports can be switched via the OPR-LPBK command.

The attribute *lpbk* and *fsflpbkstat* of the entity port are updated by this command:

- *lpbk* should be set to YES in case the *lpbktyp*=FACILITY
- *fsflpbkstat* should be set to YES in case the *lpbktyp*=FSF.

This update is reported by an ED-EPORT notification for a GEn port (only *fsflpbkstat*).

### Behaviour FS - NS, NS - FS

Switching directly from an existing near-side loopback (far-side loopback) to a far-side loopback (near-side loopback) shall not be possible (i.e. shall be denied). Instead the existing loopback has to be released prior to establish another one.

### Example 1

Provisioning a near-side facility loopback:

```
OPR-LPBK-STM16:UNITE-NE:1-1-#-#-1-1:123456:,,,FACILITY;  
REPT DBCHG  
ED-STM16:1-1-#-#-1-1::lpbk=YES;
```

### Example 2

Provisioning a far-side facility loopback:

```
OPR-LPBK-OC192:UNITE-NE:1-1-#-#-4-1:123456:,,,FSF;  
REPT DBCHG  
ED-OC192:1-1-#-#-4-1::fsflpbkstat=YES;
```

### Updated affected entities

Apart from the port entity no further entities are affected by the OPR-LPBK command. Updates of the port entities are reported via ED-*rr* (OPn port) or ED-EPORT (GEn port) notifications.

### Example input/output

Example:

Suppose for the port 1 of the pack in slot 01 a far-side facility loopback shall be set:

```
OPR-LPBK-STM16:UNITE-NE:1-1-#-#-1-1:123456:,,,FSF;  
LT-UNITE 00-11-14 12:00:00  
M 123456 COMPLD  
;
```

### Error responses

#### Validation rule: Port is out-of-service

Loopback command processing verifies that the affected port is in out-of-service state, i.e. *servicecond*=OUTOFSERVICE.

OPR-LPBK: Operate loopback (here facility loopback)

Error code: SNVS - Status, Not in Valid State, Port is not out-of-service.

**Validation rule: *modifier* consistent with given port-rate**

Loopback command processing verifies that the *modifier* parameter is consistent with the rate of the port (given by the *aid* parameter). E.g. for an OP2G5 only the *modifier* values STM16 or OC48 (depending on the port's interface standard) are allowed, for an OP10 only *modifier* values STM64 or OC192 (depending on the port's interface standard) are allowed etc.

Error code: IDNC - Input Data Not Consistent, modifier is inconsistent with existing port rate.

**Validation rule: *modifier* consistent with given port's interface standard**

Loopback command processing verifies that the *modifier* parameter is consistent with the interface standard of the port (this port given by the aid parameter). E.g. for an SDH port only the *modifier* values for STM16 or STM64 or STM256 are valid, for a SONET port only the *modifier* values OC48 or OC192 or OC768 are valid.

Error code: IDNC - Input Data Not Consistent, modifier is inconsistent with existing interface standard.

**Validation rule: Loopback must not already exist**

Loopback command processing verifies that the loopback command can not be applied to an already existing loopback. The request to establish a near-side (far-side) loopback will be rejected if a near-side (far-side) loopback for the effected port already exists.

Error code: SAOP - Status already operated, loopback already exists

**Validation rule: For GE (EPort) only far-side loopback allowed**

Loopback command processing shall verify that for an EPort only a far-side facility loopback (lpbktyp=FSF) can be switched.

Error code: IDNV - Input Data Not Valid, Invalid loopback for EPort

**Validation rule: No change of loopback allowed**

Switching directly from an existing near-side loopback (far-side loopback) to a far-side loopback (near-side loopback) is not possible (i.e. is denied).

Port  
OPR-LPBK: Operate loopback (here facility  
loopback)

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Error code: SNVS - Status, Not in Valid State, Trial to  
change loopback type

**Validation rule: No loopbacks on ports of *portClass* INNI**

Loopback command processing shall verify that the port has not  
*portClass* INNI.

Error Code: SNVS - Status, Not in Valid State, Port must  
not be of portClass INNI

### Related TL1 messages

- “RLS-LPBK: Release loopback (here facility loopback)” (7-114)
- “RTRV-LPBK: Retrieve loopback (here facility loopback)”  
(7-102)

**References** GR-199-CORE



## OPR-LPBK notification (here facility loopback)

---

There will be no OPR-LPBK notification because the changes (for the parameter *lpbk* and *fsflpbkstat*) caused by an OPR-LPBK command will be notified via an ED-*rr* notification for an OPn port (*rr* specifying the affected port i.e. OC<M>/STM<N> or via an ED-EPORT notification for a GEn port (*fsflpbkstat* only).



## RLS-LPBK: Release loopback (here facility loopback)

---

The RLS-LPBK-*modifier* command can be initiated by a user to release an existing loopback on an OPn or GEn port in the NE.

Note that the loopback type is not specified explicitly as a command parameter – instead the currently existing loopback (either a near-side or a far-side) will be released.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T4  
Priority: 1  
Abortable: No

**Input format** Command Syntax: RLS-LPBK-*modifier*:tid:aid:ctag;

### Input parameters

#### Command parameters

1. **modifier**  
This parameter indicates port rate on which the RLS-LPBK command acts on. See definition of parameter *modifier* in “OPR-LPBK: Operate loopback (here facility loopback)” (7-107).
2. **tid – Target Identifier**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
3. **aid – Access Identifier**  
This parameter specifies the port for which the releasing of the loopback is requested. See definition of parameter *aid* in “OPR-LPBK: Operate loopback (here facility loopback)” (7-107).
4. **ctag – Correlation Tag**  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

**Output format** If the RLS-LPBK command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

RLS-LPBK: Release loopback (here facility  
loopback)

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Detailed behavior description

#### Behavior – OPn Port

Existing loopback on ports can be released via the RLS-LPBK command. The attribute *lpbk* and *fsflpbkstat* of the entity port is updated by this command:

- *lpbk* should be set to NO in case the *lpbktyp*=FACILITY is released
- *fsflpbkstat* should be set to NO in case the *lpbktyp*=FSF is released.

This update is reported by a ED-*rr* notification for an OPn port (*rr* specifying the affected port i.e. OC<M>/STM<N>).

Example:

RLS-LPBK-OC48:UNITE-NE:1-1-#-#-1-1:123456;

REPT DBCHG

ED-OC48:1-1-#-#-1-1::fsflpbkstat=NO;

#### Behaviour - EP155 Port

Existing loopback on ports can be released via the “RLS-LPBK: Release loopback (here facility loopback)” (7-114) command.

The attribute *lpbk* and *fsflpbkstat* of the entity port shall be updated by this command:

- *lpbk* should be set to NO in case the *lpbktyp*=FACILITY is released
- *fsflpbkstat* should be set to NO in case the *lpbktyp*=FSF is released.

This update shall be reported by an ED-*rr* notification for an EP155 port (*rr* specifying the affected port STM1E).

### Behavior – GE1 Port

Existing loopback on ports can be released via the RLS-LPBK command. The attribute *lpbk* and *fsflpbkstat* of the entity port is updated by this command:

- *lpbk* should be set to NO in case the *lpbktyp*=FACILITY is released
- *fsflpbkstat* should be set to NO in case the *lpbktyp*=FSF is released.

This update is reported by a ED-EPORT notification for a GEn port (only *fsflpbkstat*).

### Updated affected entities

Apart from the port entity no further entities are affected by the RLS-LPBK command. Changes of the port entity are notified via ED-*rr* (OPn port) or ED-EPORT (GEn port) notifications.

Apart from the port entity no further entities are affected by the RLS-LPBK command. Changes of the port entity are notified via ED-rr for EP155 port.

**Example input/output** Please refer to the *Detailed behavior description* section for this command.

### Error responses

#### Validation rule: Loopback must exist

Loopback command processing verifies that the RLS-LPBK command can not be applied to non-existing loopback. This means e.g. that a request to release a near-side (far-side) loopback while no near-side (far-side) loopback exists is rejected.

Error code: SNVS - Status, Not in Valid State, loopback does not exist.

#### Validation rule: *modifier* consistent with given port-rate

Loopback command processing verifies that the *modifier* parameter is consistent with the rate of the port (given by the *aid* parameter). E.g. for an OP2G5 only the *modifier* values STM16 or OC48 (depending on the port's interface standard) are allowed, for an OP10 only *modifier* values STM64 or OC192 (depending on the port's interface standard) are allowed etc.



RLS-LPBK: Release loopback (here facility  
loopback)

Error code: IDNC - Input Data Not Consistent, modifier is inconsistent with existing port rate.

**Validation rule: *modifier* consistent with given port's interface standard**

Loopback command processing verifies that the *modifier* parameter is consistent with the interface standard of the port (given by the *aid* parameter). E.g. for an SDH port only the *modifier* values for STM16 or STM64 or STM256 are valid, for a SONET port only the *modifier* values OC48 or OC192 or OC768 are valid.

Error code: IDNC - Input Data Not Consistent, modifier is inconsistent with existing interface standard.

**Related TL1 messages**

- “OPR-LPBK: Operate loopback (here facility loopback)” (7-107)
- “RTRV-LPBK: Retrieve loopback (here facility loopback)” (7-102)

**References** GR-199-CORE



## RLS-LPBK notification (here facility loopback)

---

There will be no RLS-LPBK notification because the changes (for the parameter *lpbk* and *fsflpbkstat*) caused by an RLS-LPBK command will be notified via an ED-*rr* notification (*rr* specifying the affected port i.e. OC<M>/STM<N>) for an OPn port or an ED-EPORT notification for a GE1port.



# UserByte port

## Overview

---

**Purpose** Physically the UserByte-Port is a physical transmission interface, consisting of both an input and an output, which can be used to carry traffic through channels given by the E1- or F1-Byte (located in the RSOH) or the E2-Byte (located in the MSOH). Logically an UserByte-Port is an entity within an NE which models the function of the physical UserByte-Port.

Six UserByte-Ports are available (with AIDs denoted ubio1 .. ubio6) each of which can be associated to an optical port of an OPn either to the E1- or E2- or F1-Byte. The association is always bidirectional. Four of these six UserByte-Ports (AIDs: ubio1 .. ubio4) are provisionable to either the G703- or V11-interface, while the others (AIDs: ubio5,ubio6) are fixed to V11-interface.

The association as well as this mode setting can be done via the SET-OW-command. Furthermore the SET-OW command allows to release the association (dis-association). With the RTRV-OW command the information related to an UserByte-Port can be retrieved from the NE.

Note: Throughout this section the term order-wire (OW) is retained in the command names for "historical" reasons although the name user-byte would be more appropriate, because these ports can not only be used for order-wire purposes.

### Contents

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| RTRV-OW: Retrieve Orderwire and User Bytes | <a href="#">7-120</a> |
| SET-OW: Set Orderwire and User Bytes       | <a href="#">7-124</a> |
| SET-OW notification                        | <a href="#">7-128</a> |
| Autonomous notification                    | <a href="#">7-129</a> |



## RTRV-OW: Retrieve Orderwire and User Bytes

---

**General** The RTRV-OW command can be initiated by a user to retrieve the overhead access ports and any associated optical port (OPn) in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-OW:*tid:aid:ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
2. *aid* – Access Identifier  
This parameter specifies the overhead access port.  
Type: UserBytePortAID.  
Range: As given by the *UserBytePortAID* definition, the value “ubioall” is supported.
3. *ctag* – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

**Output format** In response to a valid RTRV-OW command, the following output is returned:

```
sid date time
M ctag COMPLD
  "aid:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are described in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
This parameter specifies the overhead access port for which the following spec\_block parameters are returned.  
Type: UserBytePortAID.  
Range: As given by the UserBytePortAID definition, the value "ubioall" is not allowed.

### Spec block parameters

1. intfctype – Interface Type  
This parameter specifies which electrical interface standard of the overhead access port is used.  
Two different settings are possible:
  - electrical interface according to G.703
  - electrical interface according to V.11.Note: The overhead access ports with AIDs ubio1, .. ubio4 are configurable to either G703 or V11. The overhead access ports with AIDs ubio5, ubio6 are fixed to V11.  
Type: Alphanumeric value set.  
Range: G703, V11.  
Default: G703 (for the overhead access ports given by the AIDs ubio1 .. ubio4); V11 (for the overhead access ports given by the AIDs ubio5, ubio6 - fixed to V11).
2. ohbyte – Overhead-Byte  
This parameter specifies which of the overhead bytes is used.  
Three channels are possible:
  - E1 and F1 in the RSOH (section overhead)
  - E2 in the MSOH (line overhead).Type: Alphanumeric value set.  
Range: E1, F1, E2.  
Default: E1.  
Note: In output direction the empty string appears as "\".
3. portaid  
This parameter specifies the optical port (of an OPn) with which the overhead access port (given by the output parameter aid) is associated.  
The parameter value NOCONNECT is used to indicate that the port given by portaid is not associated to the overhead access port given by the parameter aid.

Type: In case an association is established: SPortAID; In case an association is no established: Alphanumeric value set (i.e. the string "NOCONNECT").

Range: In case an association is established: SPortAID (No "all" value is supported); in case an association is no established: NOCONNECT.

Default: NOCONNECT.

**Detailed behavior  
description**

The RTRV-OW command retrieves the overhead access ports and any associated optical port (OPn) in the NE.

**Example input/output**

**Example 1**

Suppose the UserByte port ubio6 is associated with the port-4 of an OP2G5 in slot03 (the intfctype is fixed to V11 for ubio5 and ubio6):

```
RTRV-OW:UNITE-NE:1-1-ubio6:123456
sid date time
M ctag COMPLD
"1-1-ubio6:portaid=1-1-#-#-3-4,ohbyte=E1,intfctype=V11"
;
```

**Example 2**

Suppose the

- UserByte port ubio1 (V11,E1) is associated with the port-4 of an OP2G5 in slot03
- UserByte port ubio3 (G703,E2) is associated with the port-1 of an OP10G in slot07
- UserByte port ubio6 (V11,F1) is associated with the port-4 of an OP10G in slot34
- The other UserByte ports (ubio2, ubio4, ob05) are not associated:

```
RTRV-OW:UNITE-NE:1-1-ubioall:123456
sid date time
M ctag COMPLD
"1-1-ubio1:portaid=1-1-#-#-3-4,ohbyte=E1,intfctype=V11"
"1-1-ubio2:portaid=NOCONNECT,ohbyte=E1,intfctype=G703"
"1-1-ubio3:portaid=1-1-#-#-7-1,ohbyte=E2,intfctype=G703"
"1-1-ubio4:portaid=NOCONNECT,ohbyte=E1,intfctype=G703"
"1-1-ubio5:portaid=NOCONNECT,ohbyte=E1,intfctype=V11"
```

UserByte port  
RTRV-OW: Retrieve Orderwire and User  
Bytes

*TL1 messages - transmission and cross-connect  
handling*

```
"1-1-ubio6:portaid=1-1-#-#-34-4,ohbyte=F1,intfctype=V11"  
;
```

### **Related TL1 messages**

- “SET-OW: Set Orderwire and User Bytes” (7-124)



## SET-OW: Set Orderwire and User Bytes

---

**General** The SET-OW command associates the overhead byte (E1 or E2 or F1) on an optical port to an overhead access port or removes this association. Furthermore the port-interface (either G.703 or V.11) of the overhead access port can be specified.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: SET-OW:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
2. aid – Access Identifier  
The parameter *aid* specifies the overhead access port to be used for association (or removing the association).  
See definition of output parameter *aid* in “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120).
3. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

#### Spec block parameters

1. intfctype – Interface Type  
See definition of parameter *intfctype* in “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120).
2. ohbyte – Overhead-Byte  
See definition of parameter ohbyte in “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120).
3. portaid – Port Access Identifier  
This parameter specifies the optical/electrical port (of an OPn/EPn) of the userbyte to which the overhead access port (given by the command parameter aid) is associated, respectively dis-associated.



Type: In case an association is established: SPortAID; in case an association will be removed: Alphanumeric value set (i.e. the string "NOCONNECT").

Range: In case an association is established: SPortAID (No "all" value is supported); in case an association will be removed: NOCONNECT.

Default: NOCONNECT.

**Output format** If the SET-OW command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are described in the Output parameter section of "RTRV-HDR: Retrieve header" (5-8).

**Detailed behavior description** The attributes *portaid*, *ohbyte* and *intfctype* of the entity Userbyte port shall be updated by this command.

This update shall be reported by a SET-OW notification.

**Example:**

```
SET-OW:UNITE-NE:ubio3:123456:::portaid=1-1-#-#-5-1,ohbyte=E2,
intfctype=V11;
```

```
REPT DBCHG
```

```
SET-OW:ubio3::port_aid=1-1-#-#-5-1,ohbyte=E2,intfctype=V11;
```

**Update affected entities**

Apart from the Userbyte port entity no further entities are affected by the SET-OW command.

**Example input/output**

**Example 1**

Suppose the Userbyte port given by AID ubio1, to be configured to V11, shall be associated to the E1-Byte channel of the optical port of an OP10G in slot 10:

```
SET-OW:UNITE-NE:1-1-ubio1:123456:::portaid=1-1-#-#-10-1-
1,ohbyte=E1,intfctype=V11;
```

```
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

## Example 2

Suppose the association as made in Example-1 shall be removed (i.e. dis-associated):

```
SET-OW:UNITE-NE:1-1-ubio1:123456:::portaid=NOCONNECT,
ohbyte=E1,intfctype=V11;
LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

## Error responses

### Validation Rule: Interface type compliant with port

Command processing shall verify that setting the interface type to G.703 is only possible for the UserByte-Ports *ubio1*, .. *ubio4* (but not for *ubio5* and *ubio6*).

Error Code: IDNV - Input, Data Not Valid, Interface type not settable for specified UserByte-Port

### Validation rule: No association present (when associating)

Command processing shall verify that when setting up an association no association is already present.

This means, that only a one to one relation is allowed between the specified:

- Userbyte of a SDH/SONET optical/electrical port and
- UserByte port.

Error Code: SNVS - Status, Not in Valid State, association already exists

### Validation rule: Association present (when dis-associating)

Command processing shall verify that an association exists when trying to remove it.

Error Code: IENE - Input, Entity Not Exists, Specified association does not exist

**Validation rule: *ohbyte* and *intfctype* values correct (when dis-associating)**

Command processing shall verify in case of removing the association that the entered value for the parameters *ohbyte* and *intfctype* are identical with the current ones.

**Error Code:** IDNV - Input, Data Not Valid, discrepancy between entered values and current value of spec-block parameters

**Validation rule: Port exists (when associating)**

When setting up an association, the command processing shall verify that the specified SDH/SONET optical/electrical port exists.

**Error Code:** IENE - Input, Entity Not Exists, Specified port does not exist

**Related TL1 messages**

- “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120)



## SET-OW notification

---

**General** The SET-OW notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: SET-OW:*aid::spec-block*;

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition of output parameter *aid* in “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120).

#### Spec block parameters

1. intfctype – Interface Type  
See definition of parameter *intfctype* in “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120).
2. ohbyte – Overhead-Byte  
See definition of parameter ohbyte in “RTRV-OW: Retrieve Orderwire and User Bytes” (7-120).
3. portaid – Port Access Identifier  
See definition of parameter ohbyte in “SET-OW: Set Orderwire and User Bytes” (7-124).

**Behaviour description** Refer to the *Detailed behaviour description* of “SET-OW: Set Orderwire and User Bytes” (7-124).



## Autonomous notification

---

### **Start-up with default database**

The event *Start-up with default DB* causes the 6 instances of type UserByte port to be created.



# Virtual switch

## Overview

---

**Purpose** Starting with the entity Virtual Switch the TL1 commands for all entities of the GE1 functionality will be described in the following chapters.

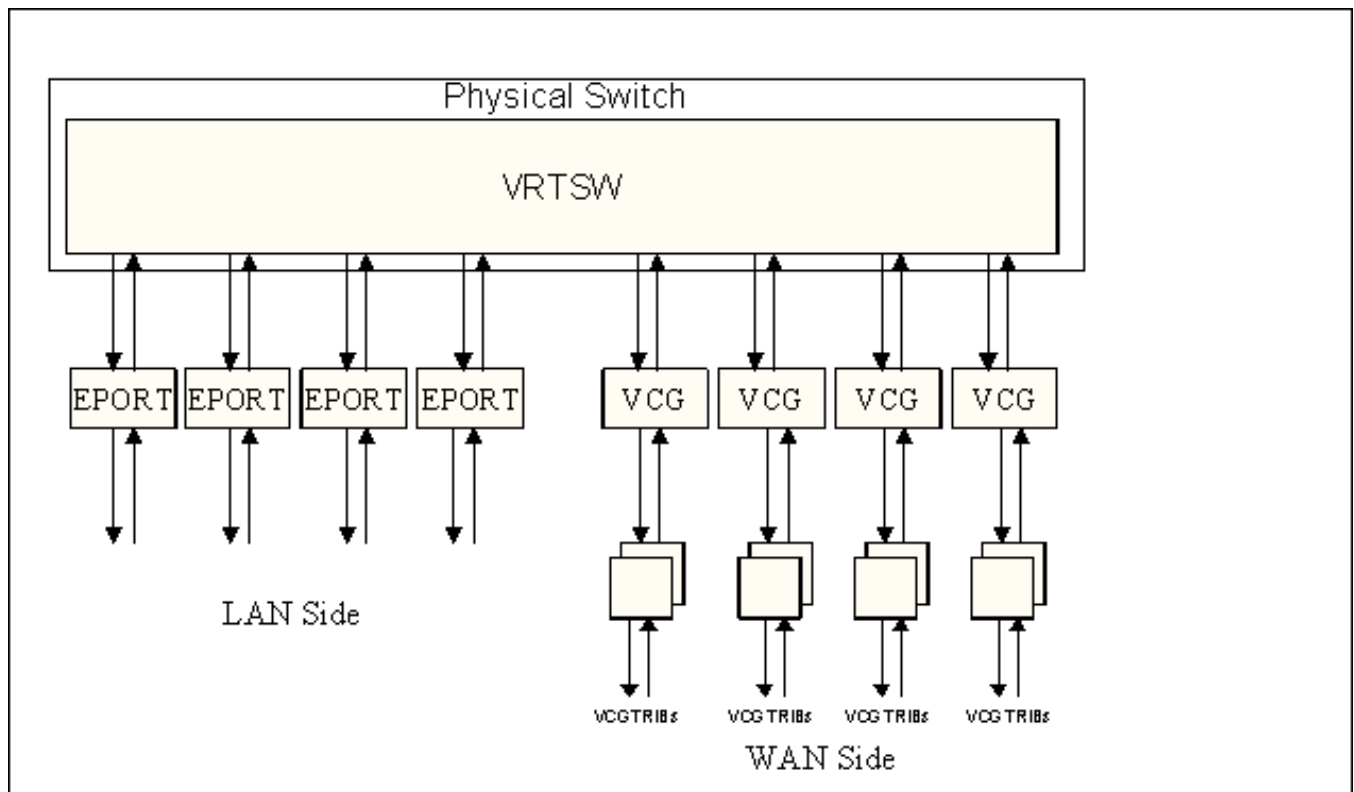
These are in detail:

- Virtual switch (VRTSW)
- Ethernet port (EPORT)
- Virtual concatenation group (VCG)
- Virtual concatenation tributary (VCGTRIB).

Each GE1 circuit pack consists of the following entities as shown in the following figure. The number of EPORT and VCG instances connected to the virtual switch is fixed. The number of VCGTRIBs per VCG depends on whether operating in SDH or SONET mode. In SDH mode there are 7 VCGTRIBs of type VC4 whereas in SONET mode there are 21 VCGTRIBs of type STS1s.

Commands for the entity *Virtual switch* allow to retrieve and modify its parameters. These commands are applicable to the GE1 circuit pack which supports one virtual switch instance.

The virtual switch as part of the physical switch on the GE1 pack is created by software. It serves to group and separate traffic within the physical switch via VLAN tagging.



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## RTRV-VRTSW: Retrieve Virtual Switch

---

The RTRV-VRTSW command retrieves the attributes of a virtual switch of a GEN pack.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-VRTSW:*tid:aid:ctag[::spec\_block]*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
2. **aid** – Access Identifier  
The access identifier specifies the slot containing a GE1 pack.  
Type: AID.  
Range: UnivSlotAID as defined in AID structure.  
The values
  - **all** and
  - **usall** for Simple\_UnivSlotAIDshall be accepted.
3. **ctag** – Correlation Tag  
See definition of *ctag* in “RTRV-HDR: Retrieve header” (5-8).

#### Spec block parameters

1. **dyn** – Retrieve Dynamic Parameters  
This parameter controls whether dynamic parameters shall be reported with the command reply or not. It shall be given only when using any of the wildcard values **all** or **usall** at the appropriate positions of the input AID. For input AIDs not using **all** or **usall** this parameter shall not be allowed. This implies that with such input AIDs the dynamic parameters are always returned.



The following output parameters of a virtual switch are affected:

- **macaddr**
- **rootpriority**
- **rootmacaddr**
- **rootcost**
- **rootport.**

Type: alphanumeric value set.

Range: YES, report dynamic parameters in the reply as well. NO (default), do not report dynamic parameters in the reply.

**Output format** After receiving the RTRV-VRTSW command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"aid:vrtswid:spec_block"
<this entire block is repeated for another vrtswid>
<this entire structure is repeated for another slot>
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are described in the Output parameter section of.

The output is in the form of a nested list. The primary list is based on the slot AID. For each slot AID, there is a nested list for each instance of a virtual switch giving the spec\_block parameters.

## Output parameters

### Command parameters

1. **aid** – Access Identifier  
This parameter specifies the slot containing a GE1 pack to be operated on.  
Type: AID.  
Range: UnivSlotAID as defined in AID structure with the exception of the value all and usall.
2. **vrtswid** - Virtual Switch Identifier

This parameter identifies the instance of the virtual switch.

- A Virtual Switch ID is unique within a single circuit pack. When creating a new Virtual Switch, the system automatically assigns a unique ID to it.
- There will be one virtual switch per physical switch, implicitly all LAN ports and all WAN ports on the physical switch are part of the single virtual switch. The ID of this virtual switch is fixed to 1. A future release may support multiple virtual switches per physical switch.

Type: integer.

Range: 1 - Currently this is the only allowed value.

Default: 1.

### Spec block parameters

1. eplst – EPORT AID list

This parameter specifies a list of EPORT instances connected to the virtual switch instance as specified by *vrtswid*.

In R3 there is only one virtual switch instance to which all ports are mapped. Therefore this list is fix.

Type: AID list.

Range: A list of EPortAIDs as specified in the AID definition section with the exception of the values all and usall in the respective components of the AID, separated by an ampersand ('&')

Example: If all four EPORTs of a GE1 are mapped to one virtual switch: 1-#-#-1-1-1&1-#-#-1-1-2&1-#-#-1-1-3&1-#-#-1-1-4

2. ethertype – VLAN tag protocol ID

This parameter specifies the VLAN tag protocol ID necessary for interworking purposes.

Type: hexadecimal value.

Range: 0x0600 .. 0xFFFF.

Default: 0x8100.

3. gvrpmode – GVRP mode

The parameter *gvrpmode* allows to control the dynamic VLAN registration mode.

Type: alphanumeric value set.

Range: ENABLED, GVRP is enabled. DISABLED (default), GVRP is disabled.

4. **macaddr** – Bridge ID address  
The parameter **macaddr** specifies the bridge address field of the bridge identifier.  
Type: alphanumeric value set.  
Range: 000000000000 to FFFFFFFF (hexadecimal value) and UNAVAILABLE, if the value can not be retrieved.
5. **rootcost** – Cost of Path to root bridge  
This parameter specifies the cost of the path to the root bridge as determined by the **Spanning Tree Protocol**.  
Type: alphanumeric value set.  
Range: 0 to 4 294 967 295 and UNAVAILABLE if the value can not be retrieved.
6. **rootmacaddr** – Root bridge ID address  
This parameter specifies the bridge identifier of the root bridge as determined by the **Spanning Tree Protocol**.  
Type: alphanumeric value set.  
Range: 000000000000 to FFFFFFFF (hexadecimal value) and UNAVAILABLE if the value can not be retrieved.
7. **rootport** – Root port identifier  
This parameter specifies the identifier of the root port, which offers the lowest cost path from the virtual switch to the root bridge.  
Type: AID or alphanumeric string.  
Range: **EPortAID** or **VCGAID** as specified in the AID definition section with the exception of the values **all**, **usall** and **vall** in the respective components of the AID; UNAVAILABLE.  
The value UNAVAILABLE is returned when the addressed virtual switch is currently the spanning tree root bridge. This is also the case if STP is disabled for all ports belonging to the virtual switch. The Value UNAVAILABLE is returned if the value can not be retrieved from the HW.
8. **rootpriority** – Root bridge priority  
The parameter **rootpriority** specifies the priority of the root bridge as determined by the Spanning Tree Protocol.  
The virtual switch defined with the lowest value for its bridge priority compared to other virtual switches in the network will be

elected as the root bridge.

Type: AID or alphanumeric string.

Range: 0 to 65535 and UNAVAILABLE if the value can not be retrieved.

Default: 32678.

9. rstpmd - Rapid Spanning Tree Protocol Mode

Type: alphanumeric value set.

10. stbrpriority – Spanning tree bridge priority

This parameter specifies the priority of the bridge to be used by the Spanning Tree Protocol.

Type: integer.

Range: 0 to 65535.

The stepping as recommended by the standard (steps of 4096 starting at 0) should be implemented by the management system. The NE will accept any value in the range described above. This has the consequence, that also the range restriction "0 to 61440" is not done by the NE.

Default: 32768.

11. stfdtm – Spanning Tree forward delay timer

The parameter *stfdtm* specifies the rSTP-related bridge forward delay timer. This parameter is relevant for both rSTP and STP.

Type: integer.

Range: 1 .. 255.

Default: 15.

12. sthellotm – Spanning Tree hello timer

The parameter *sthellotm* specifies the rSTP-related bridge hello timer. This parameter is relevant for both rSTP and STP.

Type: integer.

Range: 1 .. 225.

Default: 2.

13. *stmaxage* – Spanning Tree maximum age timer  
The parameter *stmaxage* specifies the rSTP-related maximum PDU transmission delay timer. This parameter is relevant for both rSTP and STP.  
Type: integer.  
Range: 1 .. 255.  
Default: 20.
14. *vcglst* – VCG AID list  
The parameter *vcglst* specifies a list of VCG instances connected to the virtual switch instance as specified by *vrtswid*.  
In R3 there is only one virtual switch instance to which all eports are mapped. Therefore this list is fix.  
Type: AID list.  
Range: A list of VCGAIDs as specified in the AID definition section with the exception of the values all, usall and vall in the respective components of the AID, separated by an ampersand ('&').  
Example: If all four VCGs of a GE1 are mapped to one virtual switch: 1-#-#-1-1-v1&1-#-#-1-1-v2&1-#-#-1-1-v3&1-#-#-1-1-v4.

#### Detailed behavior description

##### Omit dynamic parameters if not accessible

If the system cannot access dynamic data related to the addressed slot, e.g. due to a missing or defect pack or a system-internal communication outage, the following parameters shall response the value "UNAVAILABLE":

- *macaddr*
- *rootpriority*
- *rootmacaddr*
- *rootcost*
- *rootport*.

#### Example input/output

```
RTRV-VRTSW:LT-UNITE:1-1-#-#-1:123456;  
LT-UNITE 02-05-15 13:31:30  
M 123456 COMPLD  
"1-1-#-#-1:1:epilst=1-1-#-#-1-1&1-1-#-#-1-2&  
1-1-#-#-1-3&1-1-#-#-1-4,gvrpmode=ENABLE,  
macaddr=010203040506,rootcost=1234567890,
```

**RTRV-VRTSW: Retrieve Virtual Switch**

```
rootmacaddr=112233445566,rootport=1-1-#-#-1-v2,  
rootpriority=32678,stbrpriority=32768,stfdtm=15,  
sthellotm=2,stmaxage=20,ethertype=0x8100,  
vcglst=1-1-#-#-1-v1&1-1-#-#-1-v2&1-1-#-#-1-v3&  
1-1-#-#-1-v4"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-EPORT command.

**Related TL1 messages**

- “ED-VRTSW: Edit Virtual Switch” (7-141)



## ENT-VRTSW notification

---

**Output format** The ENT-VRTSW notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: ENT-VRTSW:*aid:vrtswid:spec\_block*;

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.
2. *vrtswid* – Virtual Switch Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.

#### Spec block parameters

1. *eplst* – EPORT AID list  
See definition of parameter *eplst* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
2. *ethertype* – VLAN tag protocol ID  
See definition of parameter *ethertype* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
3. *gvrpmode* – GVRP mode  
See definition of parameter *gvrpmode* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
4. *stbrpriority* – Spanning tree bridge priority  
See definition of parameter *stbrpriority* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
5. *stfdtm* – Spanning Tree forward delay timer  
See definition of parameter *stfdtm* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
6. *sthellotm* – Spanning Tree hello timer  
See definition of parameter *sthellotm* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).

7. stmaxage – Spanning Tree maximum age timer  
See definition of parameter *stmaxage* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
8. vcglst – VCG AID list  
See definition of parameter *vcglst* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).

**Example output**

```
LT-UNITE 02-05-15 13:31:30
A 001 REPT DBCHG
"TIME=13-30-00,DATE=02-05-15:ENT-VRTSW:
1-1-#-#-1:1:ep1st=1-1-#-#-1-1&1-1-#-#-1-2&
1-1-#-#-1-3&1-1-#-#-1-4,gvrpmode=ENABLED,
stbrpriority=32768,stfdtm=15,sthellotm=2,
stmaxage=20,ethertype=0x8100,vcglst=1-1-#-#-1-v1&1-
1-#-#-1-v2&1-1-#-#-1-v3&1-1-#-#-1-v4"
;
```





## ED-VRTSW: Edit Virtual Switch

---

The ED-VRTSW command modifies the properties of a virtual switch.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: Ed-VRTSW:*tid:aid:ctag::vrtswid:spec\_block*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
2. **aid** – Access Identifier  
Refer to the “RTRV-VRTSW: Retrieve Virtual Switch” (7-132) command for the input parameter syntax and the description of this parameter.
3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and the description of this parameter.
4. **vrtswid** – Virtual Switch Identifier  
Refer to the “RTRV-VRTSW: Retrieve Virtual Switch” (7-132) command Output parameters for the description of this parameter.

#### Spec block parameters

1. **ethertype** – VLAN tag protocol ID  
See definition of parameter *ethertype* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
2. **gvrpmode** – GVRP mode  
See definition of parameter *gvrpmode* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).

3. *stbrpriority* – Spanning tree bridge priority  
See definition of parameter *stbrpriority* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
4. *stfdtm* – Spanning Tree forward delay timer  
See definition of parameter *stfdtm* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
5. *sthellotm* – Spanning Tree hello timer  
See definition of parameter *sthellotm* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
6. *stmaxage* – Spanning Tree maximum age timer  
See definition of parameter *stmaxage* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).

**Output format** If the NE fully complies with the ED-VRTSW request, the following normal completion response shall be returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are described in the Output parameter section of.

**Detailed behavior  
description**

The ED-VRTSW command generates a REPT DBCHG message.

The command modifies the attributes (listed in the spec\_block parameters part of this command) of the addressed virtual switch entity according to the parameters given with this command.

The modification is reported by means of an ED-VRTSW notification.

**Example input/output**

```
ED-VRTSW:LT-UNITE:1-1-#-#-1:123457::1:ethertype=0x8100,
gvrpmode=DISABLED,stbrpriority=28672,stfdtm=20,
sthellotm=3,stmaxage=10;
LT-UNITE 00-11-11 11:11:00
M 123457 COMPLD
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ED-EPORT command.

**Related TL1 messages**

- “RTRV-VRTSW: Retrieve Virtual Switch” (7-132)



## ED-VRTSW notification

---

**Output format** The ED-VRTSW notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: ED-VRTSW:*aid:vrtswid:spec\_block;*

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.
2. vrtswid – Virtual Switch Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.

#### Spec block parameters

1. ethertype – VLAN tag protocol ID  
See definition of parameter *ethertype* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
2. gvrpmode – GVRP mode  
See definition of parameter *gvrpmode* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
3. stbrpriority – Spanning tree bridge priority  
See definition of parameter *stbrpriority* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
4. stfdtm – Spanning Tree forward delay timer  
See definition of parameter *stfdtm* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
5. sthellotm – Spanning Tree hello timer  
See definition of parameter *sthellotm* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).
6. stmaxage – Spanning Tree maximum age timer  
See definition of parameter *stmaxage* in “RTRV-VRTSW: Retrieve Virtual Switch” (7-132).

### Example output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
```

"TIME=11-10-30,DATE=00-11-11:ED-VRTSW:1-1-#-#-  
1:1:gvrpmode=DISABLED"

;



## DLT-VRTSW notification

---

**Output format** The DLT-VRTSW notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: DLT-VRTSW:*aid*:*vrtswid*;

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.
2. vrtswid – Virtual Switch Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.

### Example output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:DLT-VRTSW:1-1-#-#-1:1"
;
```



# Ethernet port

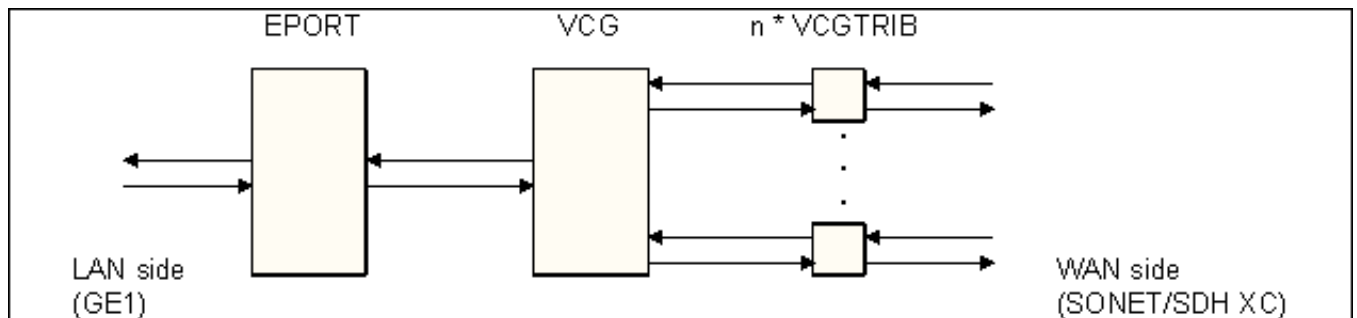
## Overview

---

**Purpose** Starting with the entity Ethernet port the TL1 commands for all entities of the GE1 functionality will be described in the following chapters. These are in detail:

- Ethernet port (EPORT)
- Virtual concatenation group (VCG)
- Virtual concatenation group tributary (VCGTRIB).

**GE1 circuit pack** Each GE1 circuit pack consists of 4 sets of entities, each set composed like in the following figure. The value of  $n$  has a range of 1 to 21.



Commands for the entity ethernet port cover the parameters for

- physical link layer (layer 1) and
- data link layer (layer 2) of the LAN side of Gigabit Ethernet.

These commands are applicable to the GE1 circuit pack which has 4 LAN ports.

Those ethernet ports are mainly intended to connect several parts of a LAN via standard transmission technique like SDH or SONET.

There is no interworking with the Data Communications Network application (which uses Ethernet-LAN ports, too) used to control the NEs. The latter one is specified in another section.

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## RTRV-EPORT: Retrieve Ethernet port

---

The RTRV-EPORT command retrieves the attributes of one or more Ethernet ports.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-EPORT-*modifier:tid:aid:ctag[:::spec\_block];*

### Input parameters

#### Command parameters

1. **modifier**  
This parameter specifies the type of the ethernet port at the LAN side of the unit.  
Type: alphanumeric value set.  
Range: 1GE.
2. **tid – Target Identifier**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. **aid – Access Identifier**  
This parameter specifies the ethernet port to be operated on.  
Type: AID  
Range: EPortAID as defined in AID structure. The values
  - *all* for Simple\_EPortAID and
  - *usall* for Simple\_UnivSlotAIDare accepted.
4. **ctag – Correlation Tag**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

### Spec block parameter

#### 1. dyn - Retrieve Dynamic Parameters

This parameter controls whether dynamic parameters shall be reported with the command reply or not. It shall be given only when using any of the wildcard values *all* or *usall* at the appropriate positions of the input AID. For input AIDs not using *all* or *usall* this parameter shall not be allowed. This implies that with such input AIDs the dynamic parameters are always returned.

The following output parameters of an ethernet port are affected:

- anegst
- fcndo
- macaddr
- rfltst
- stmd
- stpop
- stpid
- stprole
- vss
- vvidlsl.

Type: alphanumeric value set

Range: YES: Report dynamic parameters in the reply as well;

NO (default): Do not report dynamic parameters in the reply.

**Output format** After receiving the RTRV-EPORT command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid,modifier::spec_block"
  ...
  ...
  "aid,modifier::spec_block"
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output Parameter section of "RTRV-HDR: Retrieve header" (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
This parameter specifies the ethernet port to be operated on.  
Type: AID.  
Range: EPortAID as defined in AID structure with the exception of the value all.
2. modifier  
This parameter specifies the type of the ethernet port at the LAN side of the unit.  
Type: alphanumeric value set  
Range: 1GE

### Spec block parameters

1. anegst – Auto Negotiation Status  
This parameter reports the result of the autonegotiation process (e.g. flow control) of this port with its link partner.  
Type: alphanumeric value set.  
Range:
  - ANER, for auto negotiation error
  - CFG, for configuring
  - CPL, for complete
  - UNAVAILABLE, for not available/unavailable.
2. cnprole – Customer/Network Port Role  
This parameter specifies whether the addressed port is used as a customer LAN port or a network LAN port.  
Type: alphanumeric value set.  
Range: CUSTOMER (default), for a customer LAN port; NETWORK, for a network LAN port.
3. dftpri – Default User Priority  
This parameter specifies the default user priority acc. the IEEE 802.1Q tagging scheme.  
Type: alphanumeric value set.  
Range:
  - HIGH
  - LOW (default).

4. dftvlan – Default VLAN Identifier  
This parameter specifies the value of the VLAN identifier which is applied to frames (tagging) at LAN ingress (i.e. from LAN into the Ethernet-port). This only applies to frames carrying no VLAN identifier, yet.  
Type: alphanumeric value set.  
Range:
  - 1, 2, 3, ... 4092, 4093
  - UNAVAILABLE (default).To express the state UNAVAILABLE system internally the invalid VLAN ID 4094 is used.
5. enetpn – Ethernet Alarm Severity Assignment Profile Name  
This parameter points to a tributary ASAP profile name of type ENET for the designated AID.  
Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: 1 ... 24 characters length.  
Default: DEFAULT.
6. enettca – Ethernet TCA Profile Name  
This parameter specifies the name of the threshold crossing alert (TCA) profile used for Ethernet ports.  
Type: alphanumeric string.  
Range: 1 ... 24 characters length.  
Default: DEFAULT0.
7. epmode – Ethernet Port Monitoring Mode  
This parameter specifies the monitoring mode of the Ethernet port. Alarms for this port will be reported if in state MON otherwise not. The configuration of epmode will change from AUTO to MON if a valid signal is applied to that port.  
Type: alphanumeric value set.  
Range:
  - AUTO (default), for automatic
  - MON, for monitored
  - NMON, for not monitored.
8. eppm – Ethernet Port Performance Monitoring  
This parameter specifies whether the performance monitoring is enabled or disabled for this port.  
Type: alphanumeric value set.

Range:

- DISABLE (default)
- ENABLE

9. fcmd – Flow Control Mode

This parameter specifies the configuration for the pause operation of this port. This parameter is applicable only if the bridge operates in backward-compatible mode (*vlantagmd* = BCMD). If not in this mode this parameter has no effect. However, changes shall be stored in the database.

Type: alphanumeric value set.

Range:

- AUTO (default), for auto-negotiate
- DISABLE, for pause mode disabled.

10. fcmdo – Flow Control Mode Operation

This parameter reports the status of the pause operation at this port. This parameter is meaningful only if the bridge operates in backward-compatible mode (*vlantagmd* = BCMD).

Type: alphanumeric value set.

Range:

- DISABLE, for Transmit and Receive Disabled
- ENABLE, for Transmit and Receive Enabled
- ENXDISR, for Transmit Enabled, Receive Disabled
- DISXENR, for Transmit Disabled, Receive Enabled
- UNAVAILABLE, for anegst equal ANER or CFG or if the value can not be retrieved.

11. fsflpbkstat – Far Side Facility Loopback Status

This parameter reports the configuration of the far-side facility loopback of this port. A far-side loopback means that the signal on the outgoing port is looped to the incoming port (Tx -> Rx). For GE1 there is only this type of facility loopback. For changing the loopback operation refer to OPR-LPBK of section Transmission and Cross-Connection Handling, Port

Type: alphanumeric value set.

Range:

- YES, for enabled loopback
- NO (default), for disabled loopback.

12. macaddr – Port MAC Address

This parameter specifies the MAC address of the port.

Type: alphanumeric value set.

Range: 000000000000 to FFFFFFFF or UNAVAILABLE if the value can not be retrieved.

13. rfltst – Remote Fault Status

This parameter reports the fault status of the remote link partner.

This parameter is meaningful only if the bridge operates in backward-compatible mode (*vlantagmd* = BCMD).

Type: alphanumeric value set.

Range:

- ANER, for auto negotiation error
- LNKFL, for link failure
- UNAVAILABLE, for not available/unavailable
- NOER, for no error
- OFFL, for offline.

14. rptmode – Repeater Mode

This parameter sets the bridge device for this LAN port into the repeater mode (promiscuous mode), valid for a point to point connection between one LAN and one WAN port. Operating in repeater mode imposes some restrictions. See detailed behaviour section. Option: This parameter is meaningful only if the bridge operates in backward-compatible mode (*vlantagmd* == BCMD).

Type: alphanumeric value set.

Range:

- ENABLE
- DISABLE (default).

15. servcond – Service Condition

This parameter specifies the service condition for this port. Some configuration possibilities like loopbacks may be dependent on the state of *servcond*.

Type: alphanumeric value set.

Range:

- INSERVICE (default)
- OUTOFSERVICE.

16. stdis – Spanning Tree Protocol Disable

This parameter allows to enable or disable the Spanning Tree Protocol for the given port. This parameter is applicable only if the port is a network port (*cnprole* = NETWORK). For customer ports (*cnprole* = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: alphanumeric value set.

Range:

- DISABLE, STP is disabled, i.e. the port is not used in the spanning tree protocol
- ENABLE (default), STP is enabled, i.e. the port is used in the spanning tree protocol.

17. stmd – Spanning Tree Protocol Mode

This parameter returns whether the normal STP according to IEEE802.1D or the rapid spanning tree protocol rSTP according to IEEE802.1w is used on the given port. This parameter is applicable only if the port is a network port (*cnprole* = NETWORK). For customer ports (*cnprole* = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: alphanumeric value set.

Range:

- 802.1D, for the normal ST
- 802.1W, for rSTP
- UNAVAILABLE if the value can not be retrieved.

Default: There is no default value.

18. stpcost – Spanning Tree Path Cost

This parameter specifies the STP-related cost of the path egressing the given port. This parameter is applicable only if the port is a network port (*cnprole* = NETWORK). For customer ports (*cnprole* = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: integer.

Range: 1 to 200000000.

Default: 20000.

19. stpid – Spanning Tree Port Identifier

The port identifier is a 16 bit parameter consisting of the port priority (high-order bits) and the port number (low-order bits). The port number is assigned by the system to a port and is not provisionable. This parameter is applicable only if the port is a network port (*cnprole* == NETWORK). For customer ports (*cnprole* == CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: alphanumeric value set.

Range: 0 to 65535 and UNAVAILABLE if the value can not be retrieved.

20. stopop – Spanning Tree Protocol Operational

This parameter indicates whether the Spanning Tree Protocol is operational or not. This parameter is applicable only if the port is a network port (*cnprole* == NETWORK). For customer ports (*cnprole* == CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: alphanumeric value set.

Range: YES, operational; NO, not operational, UNAVAILABLE if the value can not be retrieved.

21. stpp – Spanning Tree Port Priority

This parameter specifies the priority of the given port for the Spanning Tree Protocol. This parameter is applicable only if the port is a network port (*cnprole* = NETWORK). For customer ports (*cnprole* = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: integer.

Range: 0 to 255.

The stepping as recommended by the standard (steps of 16 starting at 0) should be implemented by the management system. The NE will accept any value in the range described above. This has the consequence, that also the range restriction "0 to 240" is not done by the NE.

Default: 128.



22. stprole – Spanning Tree Protocol Role

This parameter reports the role of the given port in rSTP. This parameter is applicable only if the port is a network port (**cnprole** = NETWORK) and operates in rSTP mode (**stmd** = 802.1W). For customer ports (**cnprole** = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: alphanumeric value set.

Range:

- ROOT, root
- DESG, designated
- ALT, alternative
- BACKUP, backup
- UNAVAILABLE if the value can not be retrieved.

23. tcamd – TCA mode

This parameter shows the modus of the PM thresholding. Two thresholding methods are applicable: TR-only. (also known as the implicit reset method), TR-RTR. (also known as the explicit reset method).

Type: alphanumeric value set.

Range: TR, TRRTR (default).

24. vrtswid – Virtual Switch Identifier

See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.

Option: This parameter is reported only if the virtual switch entity exists (i.e. the VLAN tagging mode **vlntagmd** of the slot the addressed EPort belongs to is set to 802.1TAG).

25. vss – Spanning Tree Status

This parameter returns the status of the spanning tree protocol for the given port. This parameter is applicable only if the port is a network port (**cnprole** = NETWORK). For customer ports (**cnprole** = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

The name of this parameter originally stands for VCG STP status which is somewhat misleading for an EPORT but is kept for consistency reasons with other products. (When using an EPORT as a network port it participates in STP and therefore also has status information.)

Type: alphanumeric value set.

Range:

- FWG, Forwarding
- LRG, Learning
- LIS, Listening (IEEE8102.D/STP only)
- BLK, Blocking (IEEE8102.D/STP only)
- DISF, Disabled due to a failure (IEEE8102.D/STP only)
- DISA, Disabled via provisioning
- BRK, Broken (IEEE8102.w/rSTP only)
- DCD, Discarding (IEEE8102.w/rSTP only)
- UNAVAILABLE if the value can not be retrieved.

26. **vvidls** – Valid VLAN Identifier List (static)

This parameter specifies a list of all static VLAN identifiers allowed for this port. The list shall be ampersand grouped (& and &&). The list shall be packed by the NE and the management systems as good as possible by using '&' and '&&'. The vlan identifier of an incoming frame must be a member of this static VLAN Id list or the dynamic VLAN Id list **vvidlsd**. Frames tagged by a vlan identifier not member of these lists will be discarded. The port VLAN identifier (refer to parameter **dftvlan** of RTRV-EPORT Output Parameters) is not part of this list. Type: alphanumeric string and the character '&'.

Range:

- Value of each single member (valid VLAN identifier) in the list 1, 2, ..., 4092, 4093
- In case the list has no members (empty list) -1.

The length of the list is limited only by the usual system limitations like e.g. TL1 line length.

Default: -1.

Example 1:

**vvidls=-1**. The list has no members (empty list).

Example 2:

**vvidls=3&5&40&&45**. This list has the members 3, 5, 40, 41, 42, 43, 44 and 45.

Example 3:

**vvidls=1&&4093** This list has the members 1,2, 3, ..., 4092, 4093.

27. vvidlsd - Valid VLAN Identifier List (dynamic)

This parameter gives the list of all dynamic VLAN identifiers allowed for this port as gathered autonomously via GVRP. The list is ampersand grouped (& and &&). The vlan identifier of an incoming frame must be a member of this dynamic VLAN Id list or the static VLAN Id list vvidls. Frames tagged by a vlan identifier not member of these lists will be discarded.

Option: This parameter is reported only if

- the virtual switch entity exists (i.e. the VLAN tagging mode vltagmd of the slot the addressed EPort belongs to is set to 802.1TAG) AND
- GVRP is enabled on the virtual switch (*gvrpmode* = ENABLED)
- the port is a NETWORK port (*cnprole* = NETWORK).

Type: alphanumeric string and the character '&'.

Range:

- Value of each single member (valid VLAN identifier) in the list 1, 2, ..., 4092, 4093
- In case the list has no members (empty list) -1.

If the value can not be retrieved: UNAVAILABLE

Default: There is no default value.

Example 1:

vvidlsd=-1 The list has no members (empty list).

Example 2:

vvidlsd=3&5&40&&45 This list has the members 3, 5, 40, 41, 42, 43, 44 and 45.

**Detailed behaviour  
description**

The values of the following parameters are directly requested from the hardware:

- anegst
- fcmdo
- macaddr
- rfltst
- stmd
- stpop
- stpid
- stprole

RTRV-EPORT: Retrieve Ethernet port

- vss
- vvidlsd.

Thus the value "UNAVAILABLE" is reported, if the CP HW is not available in the system.

**Example input/output**

```
RTRV-EPORT-1GE:LT-UNITE:1-1-#-#-1-1:123456;
LT-UNITE 02-05-21 11:11:00
M 123456 COMPLD
"1-1-#-#-1-1,1GE::anegst=UNAVAILABLE,
cnprole=CUSTOMER,dftpri=LOW,dftvlan=UNAVAILABLE,
enetpn=DEFAULT,enettca=DEFAULT,epmode=AUTO,
eppm=DISABLE,fcmd=AUTO,fcmdo=UNAVAILABLE,
fsflpbkstat=N0,macaddr=112233445566,
rfl1tst=UNAVAILABLE,rptmode=DISABLE,rstpmde=ENABLE,
servcond=INSERVICE,stdis=DISABLE,stmde=802.1D,
stpcost=20000,stpp=128,stprole=ROOT,tcamd=TR,
vrtswid=1,vvidls=-1,vvidlsd=-1"
;
```

**Error responses**

Refer to the "RTRV-HDR: Retrieve header" (5-8) command Error responses section. The error responses listed there apply to the "RTRV-EPORT: Retrieve Ethernet port" (7-149) command.

**Related TL1 messages**

- "ED-EPORT: Edit Ethernet port" (7-164)
- "OPR-LPBK: Operate loopback (here facility loopback)" (7-107)
- "RTRV-LPBK: Retrieve loopback (here facility loopback)" (7-102)
- "RLS-LPBK: Release loopback (here facility loopback)" (7-114)



## ENT-EPORT notification

---

**Output format** The ENT-EPORT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: The ENT-EPORT notification has following specific syntax:

ENT-EPORT-modifier:*aid::spec\_block*;

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

#### Spec block parameters

1. cnprole – Customer/Network Port Role  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
2. dftpri – Default User Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
3. dftvlan – Default VLAN Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
4. enetpn – Ethernet Alarm Severity Assignment Profile Name  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
5. enettca – Ethernet TCA Profile Name  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
6. epmode – Ethernet Port Monitoring Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
7. eppm – Ethernet Port Performance Monitoring  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

8. fcmd – Flow Control Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
9. fsflpbkstat – Far Side Facility Loopback Status  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
10. rptmode – Repeater Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
11. servcond – Service Condition  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
12. stdis – Spanning Tree Protocol Disable  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
13. stpcost – Spanning Tree Path Cost  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
14. stpp – Spanning Tree Port Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
15. tcamd – TCA mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
16. vrtswid – Virtual Switch Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch”  
(7-132), Output parameters.  
Option: This parameter is reported only if the virtual switch  
entity exists (i.e. the VLAN tagging mode vltagmd of the slot  
the addressed EPort belongs to is set to 802.1TAG).
17. vvidls – Valid VLAN Identifier List (static)  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.

### Example Output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:ENT-EPORT-1GE:
1-1-#-#-2-3::cnprole=CUSTOMER,dftpri=LOW,
```

```
dftvlan=UNAVAILABLE,enetpn=DEFAULT, enettca=DEFAULT,  
epmode=AUTO,eportClass=TRADITIONAL,eportControl=NORMAL,  
eppm=DISABLE,fcmd=AUTO,fsflpbkstat=NO,rptmode=DISABLE,  
rstpmd=ENABLE,servcond=INSERVICE,stdis=DISABLE,  
stpcost=20000,stpp=128,tcamd=TR,vrtswid=1,vvidls=-1"  
;
```



## ED-EPORT: Edit Ethernet port

---

The ED-EPORT command modifies the properties of an Ethernet port.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: ED-EPORT:*modifier:tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. **modifier**  
This modifier specifies the type of the ethernet port at the LAN side.  
Type: alphanumeric value set.  
Range: 1GE.
2. **tid – Target Identifier**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. **aid – Access Identifier**  
Refer to the “RTRV-EPORT: Retrieve Ethernet port” (7-149) command for the description of this parameter.
4. **ctag – Correlation Tag**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameter

1. **cnprole – Customer/Network Port Role**  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
2. **dftpri – Default User Priority**  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.



3. dftvlan – Default VLAN Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
4. enetpn – Ethernet Alarm Severity Assignment Profile Name  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
5. enettca – Ethernet TCA Profile Name  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
6. epmode – Ethernet Port Monitoring Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
7. eppm – Ethernet Port Performance Monitoring  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
8. fcmd – Flow Control Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
9. rptmode – Repeater Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
10. servcond – Service Condition  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
11. stdis – Spanning Tree Protocol Disable  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
12. stpcost – Spanning Tree Path Cost  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
13. stpp – Spanning Tree Port Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.

14. tcamd – TCA mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
15. vvidls – Valid VLAN Identifier List (static)  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.

**Output format** If the NE fully complies with the ED-EPORT request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behaviour  
description**

The ED-EPORT generates a REPT DBCHG message.

The command modifies the attributes (listed in the *spec\_block* parameters part of this command) of the addressed port entity according to the parameters given with this command.

The modification shall be reported by means of an ED-EPORT notification.

**Update affected entities**

A change of the value of the parameter *rptmode* shall have the following side effects: The change from disable to enable or enable to disable shall set the parameter *dftvlan* and *vvidls* for this port to their default values.

During repeater mode operation no VLAN ingress filtering for tagged frames or classification for untagged frames is done. It is not intended to keep the VLAN settings being active before a switch to the repeater mode for later restoration.

**Relation of repeater mode - *rptmode* and VLAN tagging mode - *vlantagmd* of related slot**

When *vlantagmd* is set to BCMD (backward compatible mode) the value of *rptmode* is relevant. When *vlantagmd* has a value different from BCMD the value of *rptmode* is irrelevant and changes of

*rptmode* shall not be allowed. When switching *vlantagmd* back to BCMD the value of *rptmode* from the database becomes relevant again.

#### **Implicit enabling/disabling of flow control when modifying *vlantagmd***

The flow control mode of EPORTs is implicitly disabled when changing the *vlantagmd* of the related slot from backward compatible mode BCMD to 802.1TAG. However, the current value of *fcmd* shall be preserved in the database. Also modifications of *fcmd* are allowed and shall be applied to the database. When changing *vlantagmd* back to BCMD the value of *fcmd* stored in the database shall become valid again.

#### **Implicit enabling/disabling of GVRP when enabling/disabling STP for a port**

When enabling/disabling STP for a network port via parameter *stdis* GVRP is implicitly enabled/disabled for this port (if enabled via parameter *gvrpmode* of the virtual switch).

#### **Disabling of PM monitor**

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

#### **Example input/output**

```
ED-EPORT-1GE:LT-UNITE:1-1-#-#-1-1:123457:::epmode=NMON;  
    LT-UNITE 00-11-11 11:11:00  
M 123457 COMPLD  
;
```

#### **Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ED-EPORT command.

#### **Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

#### **Validation rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: servcond must be disabled for facility loopback**

Check that the *servcond* is not enabled when a facility loopback is existing for this port.

Error Code: SNVS - Status, Not in Valid State, Facility Loopback is active for this port

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error Code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Default VLAN ID not allowed in repeater mode**

No VLAN ingress classification with dftvlan is possible during repeater mode operation. The default VLAN ID has to be the value "unavailable" during this state.

Error Code: SNVS - Status, Not in Valid State, Active Repeater Mode for this Port does not allow dftvlan to be modified

**Validation rule: VLAN filtering database not allowed in repeater mode**

No VLAN filtering database, extracted from the vvidls, is used during repeater mode operation. The valid VLAN list has to be an empty list during this state.

Error Code: SNVS - Status, Not in Valid State, Active Repeater Mode for this Port does not allow vvidls to be modified

**Validation rule: Parameter modification not allowed in backward compatible mode**

No modification of the following parameters is allowed if the VLAN tagging mode *vlantagmd* of the pack, to which the specified EPORT belongs to, is set to backward compatible mode (BCMD): *cnprole*, *stdis*, *stpp*, *stpcost*, *rstopmd*.

Error Code: SNVS - Status, Not in Valid State, Modification not allowed in Backward Compatible Mode

**Validation rule: No modification of *rptmode* if *vlantagmd* = 802.1TAG**

No modification of the repeater mode *rptmode* is allowed if the VLAN tagging mode *vlantagmd* of the pack, to which the specified EPORT belongs to, is set to 802.1TAG.

Error Code: SNVS - Status, Not in Valid State, Modification not allowed

**Validation rule: Default VLAN ID is already assigned for this system**

The default VLAN ID of a LAN port cannot have the same value as the default VLAN Id of another LAN port in the system or any other instantiated VLAN in the system, except for the value 4094.

Error Code: IDNC-Input, Data, NotConsistent, Default VLAN ID is already assigned for this System.

System is here to be seen with the granularity of a GE1 circuit pack.

**Validation rule: Default VLAN ID is no allowed member of valid VLAN list for this system**

The default VLAN ID of a LAN port cannot be included into the valid VLAN list of any LAN port within the system.

Error Code: IDNC-Input, Data, NotConsistent, Default VLAN ID is not an allowed member of valid VLAN list.

System is here to be seen with the granularity of a GE1 circuit pack.

**Related TL1 message**

- “RTRV-EPORT: Retrieve Ethernet port” (7-149).



## ED-EPORT notification

---

**Output format** The ED-EPORT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The ED-EPORT notification has following specific syntax:

ED-EPORT-*modifier:aid::spec\_block;*

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

#### Spec block parameters

1. cnprole – Customer/Network Port Role  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
2. dftpri – Default User Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
3. dftvlan – Default VLAN Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
4. enetpn – Ethernet Alarm Severity Assignment Profile Name  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
5. enettca – Ethernet TCA Profile Name  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
6. epmode – Ethernet Port Monitoring Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
7. eppm – Ethernet Port Performance Monitoring  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

8. fcmd – Flow Control Mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
9. fsflpbkstat – Far Side Facility Loopback Status  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
10. servcond – Service Condition  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
11. stdis – Spanning Tree Protocol Disable  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
12. stpcost – Spanning Tree Path Cost  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
13. stpp – Spanning Tree Port Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
14. tcamd – TCA mode  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
15. vvidls – Valid VLAN Identifier List  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.

**Example output**

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:ED-EPORT-1GE:1-1-#-#-1-
1::fcmd=DISABLE"
;
```



## DLT-EPORT notification

---

**Output format** The DLT-EPORT notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The DLT-EPORT notification has the following specific syntax:

DLT-EPORT:*aid*;

### Output parameters

#### Command parameters

aid - Access Identifier

See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

### Example output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:DLT-EPORT:1-1-#-#-1-1:::"
;
```





## Autonomous notifications

---

**GE1 circuit pack is  
auto-provisioned**

If a GE1 circuit pack is auto-provisioned a GE1PORT instance will be created with the given default parameter values for all GE1 ports of the circuit pack.

This change is reported via the ENT-EPORT notification.

**LOS for Gigabit Ethernet  
port (LAN port) clears**

On a LAN port (Gigabit Ethernet) if a valid signal applied for a certain validation time and the port mode (epmode) is set to AUTO then the port mode shall be changed to MON. This change shall be reported via ED-EPORT notification with parameter epmode.



# Virtual concatenation group

## Overview

---

**Purpose** For an overview of the GE1 related entities VRTSW, EPORT, VCG and VCGTRIB see “ENT-EQPT (slot): Enter equipment (slot)” (5-95).

Commands for the entity virtual concatenation group (VCG) cover the parameters for both

- the Ethernet side (WAN ports) and
- the EoS (Ethernet over SDH/SONET).

These commands are applicable to the GE1 circuit pack which has 4 WAN ports.

Note: The virtual concatenation group (VCG) and its tributaries (VCGTRIB) have some direction dependent parameters. Following the semantic for optical ports the direction indicators input and output are used.

### Input direction

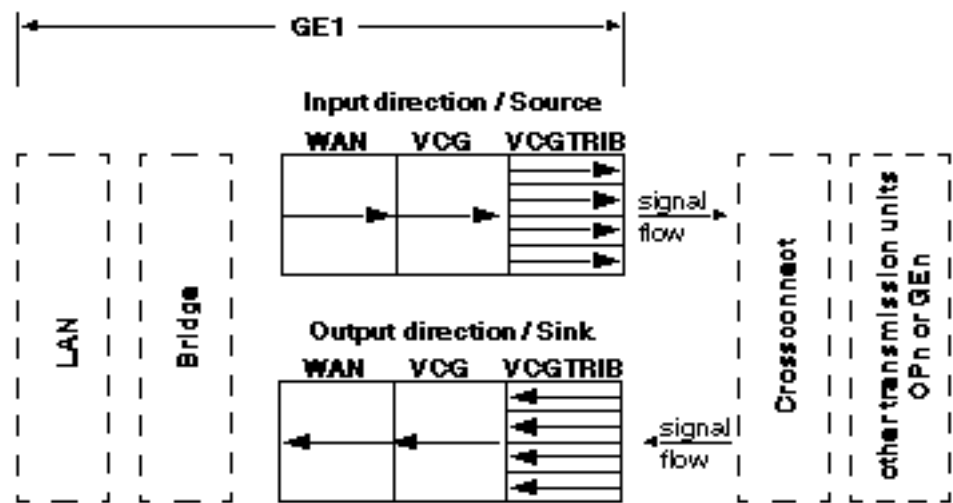
*WAN → VCG → VCGTRIB → Cross-connect*

As those tributaries have termination function this is also often called source.

### Output direction

*Cross-connect → VCGTRIB → VCG → WAN*

As those tributaries have termination function this is also often called sink.



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## RTRV-VCG: Retrieve virtual concatenation group

---

The RTRV-VCG command retrieves the attributes of a virtual concatenation group.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-VCG:*tid:aid:ctag[:::spec\_block];*

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. **aid** – Access Identifier  
This parameter specifies the virtual concatenation group (VCG) to be operated on.  
Type: AID.  
Range: VCGAID as defined in AID structure. The values
  - **vall** for Simple\_VCGAID and
  - **usall** for Simple\_UnivSlotAIDare accepted.
3. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameter

1. **dyn** - Retrieve Dynamic Parameters  
This parameter controls whether dynamic parameters shall be reported with the command reply or not. It shall be given only when using any of the wildcard values **usall** or **vall** at the appropriate positions of the input AID. For input AIDs not using

*usall* or *vall* this parameter is not allowed. This implies that with such input AIDs the dynamic parameters are always returned. The following output parameters of a vcgport port are affected: *mfiv*, *macaddr*, *stmd*, *stpop*, *stpid*, *stprole*, *vss*, *vvidlsd*.

Type: alphanumeric value set.

Range:

- YES: Report dynamic parameters in the reply as well
- NO (default): Do not report dynamic parameters in the reply.

**Output format** If the NE fully complies with the RTRV-VCG request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid::spec_block"
    <1 or more of the line above>
  "tribaid:mfiv,MFIV"
    <several lines, one for each tribaid belonging to aid,
    or no lines, depending on dynamic data retrieval
    mode>
    ...
    ...
  "aid::spec_block"
    <1 or more of the line above>
  "tribaid:mfiv,MFIV"
    <several lines, one for each tribaid belonging to aid,
    or no lines, depending on dynamic data retrieval
    mode>
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
This parameter specifies the VCG to be operated on.  
Type: AID.  
Range: VCGAID as defined in AID structure with the exception of the value *vall*.
2. tribaid – Tributary Access Identifier  
The tributary access identifier shall specify a tributary belonging to the virtual concatenation group (VCG) given by the aid above.  
Type: AID.  
Range: VCGNumAID as defined in AID structure with the exception of the value all.
3. mfiv - Multiframe Indicator Value  
This parameter reports the differential delay between the tributary addressed by *tribaid* (see above) and the fastest tributary of the VCG. The fastest tributary has the value zero. For each retrieve of a VCG there is a report of mfiv for all tributaries belonging to the VCG.  
Type: alphanumeric value set.  
Range:
  - 0, 125, 250, 375, ..., 511750, 511875 [microseconds]
  - NA
  - UNAVAILABLEIn fact the reported range for delay is 0 ... 255875 microseconds. Other values can only be reported as raw values without a delay calculation between the tributaries. UNAVAILABLE is reported when the accepted MFI contents do not meet the basic acceptance criteria (multiframe alignment not completed), or intra-NE communication with the reporting entity is disrupted. NA (Not Applicable) shall be reported under defect conditions detected by the Sn[i] termination function or the VC-n is not part of an S-n-Xv group.

### Spec block parameters

1. cnprole – Customer/Network Port Role  
This parameter specifies whether the addressed port is used as a customer WAN port or a network WAN port.  
Type: alphanumeric value set.  
Range: CUSTOMER, for a customer WAN port. NETWORK (default), for a network WAN port.
2. dftpri – Default User Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
3. enetpn – Ethernet Alarm Severity Assignment Profile Name  
This parameter points to a tributary ASAP profile name of type ENET for the designated AID.  
Ethernet port and VCG port have the same ASAP profile named ENET.  
Type: Alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: 1 ... 24 characters length.  
Default: DEFAULT.
4. enettca – Ethernet TCA Profile Name  
This parameter specifies the name of the threshold crossing alert (TCA) profile used for the VCG.  
Type: alphanumeric string.  
Range: 1 ... 24 characters length.  
Default: DEFAULT0.
5. eportClass – Ethernet Port Class  
This identifies the ethernet port class of the AID. *eportClass* is used to specify ethernet ports for use by NN application.  
Type: alphanumeric value set.  
Range: TRADITIONAL (default), EDGE .
6. eportControl – Ethernet Port Control (Ethernet Port Administrative Mode)  
This identifies the administrative mode of ethernet ports of *eportClass*=EDGE. For ethernet ports of other ethernet port class this parameter shall not be relevant. *eportControl* is introduced specifically for use by NN application.  
Type: alphanumeric value set.  
Range: NORMAL (default), MAINT, LOCKOUT .

7. htmr – Hold-Off Time

The parameter *htmr* shall specify the hold off time for the LCAS protection. If a tributary is configured to take part on transmission for the VCG and it goes to state faulty then this tributary is taken out of transmission by LCAS after the hold off time. This time is configured on group level, i.e. all tributaries have the same value for hold-off time. This parameter only affects NE behaviour if *lcasmd*=ENABLED.

Type: numeric value set.

Range: 0 (default), 100, 200, ..., 9900, 10000 [milliseconds].

8. inputsig – Tributary Input Signal Rate List

This parameter reports the tributary structure of the VCG port in input direction. This will implicitly give the maximum capacity of the VCG port, too. The tributary structure depends on interface standard specified for this VCG by *istd*. For definition of *istd* refer to “RTRV-VCG: Retrieve virtual concatenation group” (7-176) Output parameters.

Type: numeric string of the form NX

- N shall specify the count of container type X
- X shall specify the container type (or envelope).

Range:

- *istd*=SDH: N=7, X = 4 for VC-4
- *istd*=SONET: N=21, X=1 for STS-1.

Default: *istd*=SDH: 74; *istd*=SONET: 211.

9. istd – Interface Standard

This parameter specifies the interface standard of this VCG. This value is applied for both input and output direction.

Type: alphanumeric value set.

Range:

- SDH
- SONET.

Default: As derived from parameter *istddflt* specified at configuration management, section System RTRV-EQPT.

10. lcasmd – LCAS Mode

This parameter specifies the operation mode of the Link Capacity Adjustment Scheme for this VCG. This value is bi-directional.

Type: alphanumeric value set.



Range:

- DISABLE
- ENABLE (default).

11. macaddr – Port MAC Address

See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

12. stdis – Spanning Tree Protocol Disable

This parameter allows to enable or disable the Spanning Tree Protocol for the given port. This parameter is applicable only if the port is a network port (*cnprole* = NETWORK). For customer ports (*cnprole* = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: alphanumeric value set.

Range: DISABLE, STP is disabled, i.e. the port is not used to build the spanning tree. ENABLE (default), STP is enabled, i.e. the port is used to build the spanning tree.

As VCGs are by default network ports the default value is to enable STP.

13. stmd – Spanning Tree Protocol Mode

See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

14. stpcost – Spanning Tree Path Cost

This parameter specifies the STP-related cost of the path egressing the given port. This parameter is applicable only if the port is a network port (*cnprole* = NETWORK). For customer ports (*cnprole* = CUSTOMER) this parameter has no effect. However, changes shall be stored in the database.

Type: integer.

Range: 1 to 200000000.

Default: 20000.

The default value depends on the provisioned VCG size. As currently only a fix size of 7 VC4s or 21 STS1s corresponding to approx. 1 Gbit is supported the default value is as shown above.

15. stpid – Spanning Tree Port Identifier

See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

16. stpop – Spanning Tree Protocol Operational

See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.

17. stpp – Spanning Tree Port Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
18. stprole – Spanning Tree Protocol Role  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
19. tcamd – TCA mode  
This parameter shows the modus of the PM thresholding.  
Two thresholding methods are applicable: TR-only, (also known  
as the implicit reset method). TR-RTR, (also known as the  
explicit reset method).  
Type: alphanumeric value set.  
Range: TR, TRRTR.  
Default: TRRTR in SDH mode; TR in SONET mode.
20. unequipoisig – Unequipped Tributary Output Signal Rate List  
The parameter unequipoisig shall specify the tributary structure  
and the capacity of the VCG port in output direction. As long as  
there is no cross-connection applied the specified tributaries shall  
be occupied by an unequipped signal. The parameter will  
implicitly give the maximum capacity of the VCG port, too. The  
tributary structure depends on interface standard specified for this  
VCG by istd . For definition of istd refer to RTRV-VCG Output  
Parameters. The signal will be immediately terminated on the  
unit. So no unequipped signal is visible to the outside world.  
Type: numeric string of the form NX
  - N shall specify the count of container type X
  - X shall specify the container type (or envelope).Range:
  - istd=SDH: N=7, X=4 for VC-4
  - istd=SONET: N=21, X=1 for STS-1.Default: istd=SDH: 74; istd=SONET: 211.
21. vmode – VCG Monitoring Mode  
The parameter vmode shall specify the monitoring mode for  
VCG. Alarms for this port will be reported if in mode MON  
otherwise not. There is no automatic mode.  
Type: alphanumeric value set.  
Range:
  - MON, for monitored
  - NMON (default), for not monitored.

22. **vpm** – VCG Performance Monitoring  
The parameter **vpm** shall specify whether the performance monitoring is enabled or disabled for this port.  
Type: alphanumeric value set.  
Range:
  - DISABLE (default)
  - ENABLE.
23. **vrtswid** – Virtual Switch Identifier  
See definition at “RTRV-VRTSW: Retrieve Virtual Switch” (7-132), Output parameters.  
This parameter is reported only if the virtual switch entity exists (i.e. the VLAN tagging mode **vlantagmd** of the slot the addressed EPort belongs to is set to 802.1TAG).
24. **vss** – Spanning Tree Status  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
25. **vvidls** – Valid VLAN Identifier List (static)  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
26. **vvidlsd** – Valid VLAN Identifier List (dynamic)  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
27. **wtr** – Wait To Restore Time  
The parameter **wtr** shall specify the wait to restore time for the LCAS protection. If a tributary is configured to take part on transmission for the VCG and it recovers from a faulty state then this tributary is taken in again to transmission by LCAS after the wait-to-restore time. This time is configured on group level, i.e. all tributaries have the same value for the wait-to-restore time. This parameter only affects NE behaviour if **lcasmd**=ENABLED.  
Type: alphanumeric value set.  
Range: 0, 1, 2, ..., 59, 60 [minutes].  
Default: 5.

**Detailed behavior  
description**

The RTRV-VCG does not generate a REPT DBCHG message. The command retrieves all VCG parameters as described in section Output parameters.

The values of the following parameters are directly requested from the hardware:

- mfiv
- macaddr
- stmd
- stpop
- stpid
- stprole
- vss
- vvidlsd.

**Example input/output**

```
RTRV-VCG:LT-UNITE:1-1-#-#-2-v3:123456;
LT-UNITE 01-03-20 09:05:00
M 123456 COMPLD
"1-1-#-#-02-v3:cnprole=NETWORK,dftpri=LOW,
dftvlan=UNAVAILABLE,enetpn=DEFAULT,enettca=DEFAULT0,
htmr=0,inputsig=211,istd=SONET,lcasmd=ENABLE,
macaddr=112233445566,rstpm=ENABLE,stdis=ENABLE,
stmd=802.1W,stpcost=20000,stpp=128,stprole=DESG,
tcamd=TR,unequiposig=211,vmode=NMON,vpm=DISABLE,
vrtswid=1,vss=FWG,vvidls=-1,vvidlsd=1&24,wtr=5"
"1-1-#-#-02-v3-1:125,MFIV"
.
. for all 21 VCG members
.
"1-1-#-#-02-v3-21:250,MFIV"
;

RTRV-VCG:LT-UNITE:1-1-#-#-2-vall:123456;
LT-UNITE 01-03-20 09:05:00
M 123456 COMPLD
"1-1-#-#-02-v1:cnprole=NETWORK,dftpri=LOW,
dftvlan=UNAVAILABLE,enetpn=DEFAULT,enettca=DEFAULT0,
htmr=0,inputsig=211,istd=SONET,lcasmd=ENABLE,
rstpm=ENABLE,stdis=ENABLE,stpcost=20000,stpp=128,
tcamd=TR,unequiposig=211,vmode=NMON,vpm=DISABLE,
vrtswid=1,vvidls=-1,wtr=5"
"1-1-#-#-02-v2:cnprole=NETWORK,dftpri=LOW,
dftvlan=UNAVAILABLE,enetpn=DEFAULT,enettca=DEFAULT0,
```

```
htmr=0,inputsig=211,istd=SONET,lcasmd=ENABLE,  
rstpmd=ENABLE,stdis=ENABLE,stpcost=20000,stpp=128,  
tcamd=TR,unequiposig=211,vmode=NMON,vpm=DISABLE,  
vrtswid=1,vvidls=-1,wtr=5"  
"1-1-#-#-02-v3:cnprole=NETWORK,dftpri=LOW,  
dftvlan=UNAVAILABLE,enetpn=DEFAULT,enettca=DEFAULT0,  
htmr=0,inputsig=211,istd=SONET,lcasmd=ENABLE,  
rstpmd=ENABLE,stdis=ENABLE,stpcost=20000,stpp=128,  
tcamd=TR,unequiposig=211,vmode=NMON,vpm=DISABLE,  
vrtswid=1,vvidls=-1,wtr=5"  
"1-1-#-#-02-v4:cnprole=NETWORK,dftpri=LOW,  
dftvlan=UNAVAILABLE,enetpn=DEFAULT,enettca=DEFAULT0,  
htmr=0,inputsig=211,istd=SONET,lcasmd=ENABLE,  
rstpmd=ENABLE,stdis=ENABLE,stpcost=20000,stpp=128,  
tcamd=TR,unequiposig=211,vmode=NMON,vpm=DISABLE,  
vrtswid=1,vvidls=-1,wtr=5"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-VCG command, too.

**Related TL1 messages** “ED-VCG: Edit virtual concatenation group” (7-189)



## ENT-VCG notification

---

**Output format** The ENT-VCG notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: The ENT-VCG notification has following specific syntax:

ENT-VCG:*aid::spec\_block*;

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

#### Spec block parameters

1. cnprole – Customer/Network Port Role  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
2. dftpri – Default User Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
3. dftvlan – Default VLAN Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
4. enetpn – Ethernet Alarm Severity Assignment Profile Name  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
5. enettca – Ethernet TCA Profile Name  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
6. eportClass – Ethernet Port Class  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
7. eportControl – Ethernet Port Control (Ethernet Port Administrative Mode)  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

8. htmr – Hold-Off Time  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
9. inputsig – Tributary Input Signal Rate List  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
10. istd – Interface Standard  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
11. lcasmd – LCAS Mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
12. stdis – Spanning Tree Protocol Disable  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
13. stpcost – Spanning Tree Path Cost  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
14. stpp – Spanning Tree Port Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
15. tcamd – TCA mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
16. unequiposig – Unequipped Tributary Output Signal Rate List  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
17. vmode – VCG Monitoring Mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
18. vpm – VCG Performance Monitoring  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

19. vrtswid – Virtual Switch Identifier  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.  
Option: This parameter is reported only if the virtual switch entity exists (i.e. the VLAN tagging mode vltagmd of the slot the addressed VCG belongs to is set to 802.1TAG).
20. vvidls – Valid VLAN Identifier List (static)  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
21. wtr – Wait To Restore Time  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.





## ED-VCG: Edit virtual concatenation group

---

The ED-VCG command modifies the properties of a virtual concatenation group.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: **ED-VCG:tid:aid:ctag:::spec\_block;**

### Input parameters

#### Command parameters

1. tid - Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. aid - Access Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. ctag - Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameter

1. cnprole – Customer/Network Port Role  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
2. dftpri – Default User Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
3. dftvlan – Default VLAN Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
4. enetpn – Ethernet Alarm Severity Assignment Profile Name  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

5. enettca – Ethernet TCA Profile Name  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
6. eportClass – Ethernet Port Class  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
7. eportControl – Ethernet Port Control (Ethernet Port Administrative Mode)  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
8. htmr – Hold-Off Time  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
9. istd – Interface Standard  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
10. lcasmd – LCAS Mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
11. stdis – Spanning Tree Protocol Disable  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
12. stpcost – Spanning Tree Path Cost  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
13. stpp – Spanning Tree Port Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
14. tcamd – TCA mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
15. vmode – VCG Monitoring Mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
16. vpm – VCG Performance Monitoring  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

17. vvidls – Valid VLAN Identifier List (static)  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
18. wtr – Wait To Restore Time  
See definition at “RTRV-VCG: Retrieve virtual concatenation  
group” (7-176), Output parameters.

**Output format** If the NE fully complies with the ED-VCG request, the following  
normal completion response shall be returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal  
completion response are specified in the Output parameter section of  
“RTRV-HDR: Retrieve header” (5-8).

**Detailed behaviour  
description**

The ED-VCG shall generate a REPT DBCHG message.

The command shall modify the attributes (listed in the spec\_block  
parameters part of this command) of the addressed port entity  
according to the parameters given with this command.

The modification shall be reported by means of an ED-VCG  
notification.

**Mode changes**

A change of *istd* shall only be possible if the VCG port has no  
cross-connections. A change of *istd* shall not be dependent from  
pending alarms or active performance monitoring for the individual  
tributaries.

A change of *istd* shall set default values for the parameters:

- cnprole, dftpri, dftvlan, enettca, htmr, lcasmd, stdis, stpcost, stpp,  
tcamd, vmode, vpm, wtr.

A change of *istd* shall set the parameter vvidls to default (empty list),  
if the GE pack works not in backward compatible mode (vlantagmd  
¼ BCMD). If the GE pack works in backward compatible mode  
(vlantagmd = BCMD), then the parameter vvidls is not reseted to an  
empty list.(VRTSW does not exists, so the vvidls is set indirectly by  
EPORT configuration).

### Update affected entities

A change of the value of the parameter lcasmd shall trigger the report of the corresponding tributary changes via a ED-VCGTRIB notification.

A change of the value of the parameter istd shall trigger the deletion of all tributaries of this VCG port and the creation of tributaries for this VCG port with the default values according the new value of *istd*. The deletion is reported by a DLT-VCGTRIB notification. The creation is reported by an ENT-VCGTRIB notification. The deletion of the objects leads to a clearance of pending alarms for these objects. The generation of objects with a different istd generates new alarms for these objects if the alarm condition is still present.

### Relation of STP Disable and GVRP

Refer to the Detailed behavior of the “ED-EPORT: Edit Ethernet port” (7-164) command for details.

### Switching of interface standard - Ignore other parameters

If additional parameters beside istd are specified with the ED-rr command they will be ignored by the NE. This simple approach has the advantage that all ambiguous situations are avoided and it is not necessary to implement an order or follow a certain sequence when evaluating the parameters.

### Example for *istd* change from SONET to SDH

```
ED-VCG:LT-UNITE:1-1-#-#-2-V3:654321:::istd=SDH;
    LT-UNITE 00-11-11 11:11:00
M 654321 COMPLD
;
    LT-UNITE 00-11-11 11:11:05
A 001 REPT DBCHG
    "TIME=11-11-02,DATE=00-11-11:ED-VCG:1-1-#-#-2-V3::
    istd=SDH"
;
    LT-UNITE 00-11-11 11:11:06
A 003 REPT DBCHG
    "TIME=11-11-02,DATE=00-11-11:DLT-VCGTRIB:
    1-1-#-#-2-V3-1&&-21"
;
    LT-UNITE 00-11-11 11:11:08
A 005 REPT DBCHG
    "TIME=11-11-05,DATE=00-11-11:ENT-VCGTRIB-VC:
```

```
1-1-#-#-2-V3-1&-4&-7&-10&-13&-16&-19::brstintvl=7,  
brstthr=30,degthr=-6,dexctr=-3,hptimais=ENABLE,  
exphptrc=89000000000000000000000000000000,  
hptimmon=DISABLE,inmbs=DISABLE,inmbst=NA,  
outmbs=DISABLE,outmbst=NA,ptpn=DEFAULT,ptrcrfmt=1,  
ptrcwfmt=1,sdsfmode=BURST,tmonmd=NMON,trc=00,  
tslmmmon=ENABLE"  
;
```

### Group notifications for VCG tributaries

Refer to the Detailed behavior of the ENT-EQPT (slot) command for details on grouped notifications for VCG tributaries.

### Disabling of PM monitor

See Detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

Two different scenario are relevant w.r.t. disabling of PM monitors in the context of this command:

- set the 'pm enable' attribute to disable - affects VCG PM monitors
- change interface standard - affects VCGTRIB PM monitors due to deletion.

### Changing TCA mode from TR-RTR to TR-only

See Detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

### Example input/output

```
ED-VCG-1GE:LT-UNITE:1-1-#-#-1-V1:123456:::vpmode=NMON;  
LT-UNITE 00-11-11 11:11:00  
M 123456 COMPLD  
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ED-VCG command.

### Validation Rule: cross-connection - interface standard change

Check that the interface standard is not changed if there is still a cross-connection applied to any tributary of the whole VCG port.

Whole port means all tributaries of a port independent of there configured membership.

Error code: SNVS - Status, Not in Valid State,  
cross-connections are still existing

**Validation rule: no loopbacks for interface standard change**

Check that the interface standard parameter (istd) is not changed when cross-connection loopback is still on this port.

Error code: SNVS - Status, Not in Valid State, a loopback is existing

**Validation rule: ASAP profile exists**

Check of the existance of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: *inputsig* consistent with existing cross-connections**

Check of the consistency of the structure of the input signal (inputsig) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent input signal

**Validation rule: *unequiposig* consistent with existing cross-connections**

Check of the consistency of the structure of the output signal (unequiposig) with existing cross-connections.

Error code: SNVS - Status, Not in Valid State, inconsistent output signal

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation rule: Parameter modification not allowed in backward compatible mode**

No modification of the following parameters shall be allowed if the VLAN tagging mode *vlantagmd* of the pack, to which the specified VCG port belongs to, is set to backward compatible mode (BCMD): *cnprole*, *stdis*, *dftpri*, *dftvlan*, *stpp*, *stpcost*, *rstopmd*, *vvidls*.

Error Code: SNVS - Status, Not in Valid State, Modification not allowed in Backward Compatible Mode

**Default VLAN ID is already assigned for this system**

Refer to the Detailed behavior of “ED-EPORT: Edit Ethernet port” (7-164) for details.

**Default VLAN ID is no allowed member of valid VLAN list for this system**

Refer to the Detailed behavior of “ED-EPORT: Edit Ethernet port” (7-164) for details.

**Related TL1 Messages**      “RTRV-VCG: Retrieve virtual concatenation group” (7-176)



## ED-VCG notification

---

**Output format** The ED-VCG notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The ED-VCG notification has the following specific syntax:

ED-VCG:*aid::spec\_block*;

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

#### Spec block parameters

1. cnprole – Customer/Network Port Role  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
2. dftpri – Default User Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
3. dftvlan – Default VLAN Identifier  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
4. enetpn – Ethernet Alarm Severity Assignment Profile Name  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
5. enettca – Ethernet TCA Profile Name  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
6. eportClass – Ethernet Port Class  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
7. eportControl – Ethernet Port Control (Ethernet Port Administrative Mode)  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.



8. htmr – Hold-Off Time  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
9. inputsig – Tributary Input Signal Rate List  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
10. istd – Interface Standard  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
11. lcasmd – LCAS Mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
12. stdis – Spanning Tree Protocol Disable  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
13. stpcost – Spanning Tree Path Cost  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
14. stpp – Spanning Tree Port Priority  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149), Output parameters.
15. tcamd – TCA mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
16. unequiposig – Unequipped Tributary Output Signal Rate List  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
17. vmode – VCG Monitoring Mode  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.
18. vpm – VCG Performance Monitoring  
See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

19. vvidls – Valid VLAN Identifier List (static)  
See definition at “RTRV-EPORT: Retrieve Ethernet port” (7-149),  
Output parameters.
20. wtr – Wait To Restore Time  
See definition at “RTRV-VCG: Retrieve virtual concatenation  
group” (7-176), Output parameters.

**Example output**

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:ED-VCG:1-1-#-#-1-
V1::vmode=MON"
;
```



## DLT-VCG notification

---

**Output format** The DLT-VCG notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The DLT-VCG notification has the following specific syntax:

DLT-VCG:*aid*;

### Output parameters

#### Command parameter

aid - Access Identifier

See definition at “RTRV-VCG: Retrieve virtual concatenation group” (7-176), Output parameters.

### Example output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
  "TIME=11-10-30,DATE=00-11-11:DLT-VCG:1-1-#-#-1-V1"
;
```



## Autonomous notifications

---

**GE1 circuit pack is  
auto-provisioned**

If a GE1 circuit pack is auto-provisioned a VCG instance will be created with the given default parameter values for all VCGs of the circuit pack.

This change is reported via the ENT-VCG notification.



# Virtual concatenation group tributary

## Overview

---

**Purpose** For an overview of the GE1 related entities EPORT, VCG and VCGTRIB see “ENT-EQPT (slot): Enter equipment (slot)” (5-95).

Commands for the entity virtual concatenation group tributary cover the parameters for

- standard termination as for other tributaries
- tributary related parameters of virtual concatenation.

Each virtual concatenation tributary can be configured independently.

### Contents

|                                                              |                       |
|--------------------------------------------------------------|-----------------------|
| RTRV-VCGTRIB: Retrieve virtual concatenation group tributary | <a href="#">7-202</a> |
| ENT-VCGTRIB notification                                     | <a href="#">7-216</a> |
| ED-VCGTRIB: Edit virtual concatenation group tributary       | <a href="#">7-219</a> |
| ED-VCGTRIB notification                                      | <a href="#">7-225</a> |
| DLT-VCGTRIB notification                                     | <a href="#">7-228</a> |
| OPR-VCGTRIB: Operate virtual concatenation group tributary   | <a href="#">7-229</a> |
| Autonomous notifications                                     | <a href="#">7-231</a> |



## RTRV-VCGTRIB: Retrieve virtual concatenation group tributary

---

The RTRV-VCGTRIB command retrieves the attributes of a VCG tributary.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-VCGTRIB-*modifier:tid:aid:ctag[:::spec\_block]*;

### Input parameters

#### Command parameters

1. **modifier**  
This parameter specifies the type of the tributary.  
Type: alphanumeric value set.  
Range:
  - ALL
  - STS
  - VC.
2. **tid – Target Identifier**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. **aid – Access Identifier**  
This parameter specifies VCG tributary to be operated on.  
Type: AID.  
Range: VCGNumAID as defined in AID structure. The values
  - *all* for Simple\_VCGNumAID
  - *vall* for Simple\_VCGAID
  - *usall* for Simple\_UnivSlotAIDshall be accepted.
4. **ctag – Correlation Tag**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

### Spec block parameter

dyn - Retrieve Dynamic Parameters

This parameter controls whether dynamic parameters shall be reported with the command reply or not. It shall be given only when using any of the wildcard values all, usall or vall at the appropriate positions of the input AID. For input AIDs not using all, usall or vall this parameter shall not be allowed.

The following output parameters of a vcgtrib are affected:

- aseqno
- tseqno
- ptrc
- ptrcst
- rsiglb
- trailst.

Type: alphanumeric value set.

Range: YES: Report dynamic parameters in the reply as well; NO (default): Do not report dynamic parameters in the reply.

**Output format** If the NE fully complies with the RTRV-VCGTRIB request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid::spec_block set1"
    <1 or more of the line above,
      or no lines, depending on dynamic data retrieval
mode>
  "aid,aidtype::spec_block set2"
    <1 or more of the line above>
    ...
    ...
  "aid::spec_block set1"
    <1 or more of the line above,
      or no lines, depending on dynamic data retrieval
mode>
  "aid,aidtype::spec_block set2"
    <1 or more of the line above>
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Command parameters

1. aid – Access Identifier  
This parameter specifies the VCG tributary whose attributes are reported.  
Type: AID.  
Range: VCGNumAID as defined in AID structure with exception of value all.
2. aidtype - Access Identifier Type  
This parameter specifies the type of the tributary.  
Type: alphanumeric value set.  
Range: STS or VC.

### Spec block parameters Set 1

1. aseqno - Accepted Sequence Number  
This parameter reports the accepted sequence number of the tributary. In case that the received sequence no. does not meet the basic acceptance criteria, a disrupted intra-NE communication with the reporting entity, or under defect conditions 'not available' shall be reported. If the tributary to be reported is no configured member of the VCG 'not applicable' shall be reported.  
Type: alphanumeric value set.  
Range:
  - 0, 1, 2, ..., 254, 255
  - NA, for not applicable
  - UNAVAILABLE, for not available/unavailable.



Although the normal accepted sequence no. is limited to 20 for 21 tributaries, the NE is not prevented to report a higher one if received (accompanied by a proper alarm).

2. tseqno - Transmitted Sequence Number

This parameter reports the transmitted sequence number of the tributary. In case of a disrupted intra-NE communication with the reporting unit 'not available' shall be reported. If the tributary to be reported is no configured member of the VCG 'not applicable' shall be reported.

Type: alphanumeric value set.

Range:

- 0, 1, 2, ..., 19, 20
- NA, for not applicable
- UNAVAILABLE, for not available/unavailable.

The actual range could be less, dependent on - different tributary type (0 ... 6 for VC-4), - configured membership, - actual membership (because of LCAS).

## Spec block parameters Set 2

Mode STS | VC

Some of the spec block parameters set 2 depend on the *modifier* (for RTRV) or *aidtype* (for ED, ED Not. and ENT Not.). Those parameters are only applicable for the given mode, i.e in the other mode they shall be neither reported nor modifiable.

1. brstintvl - Bursty Interval

This parameter specifies the measurement period for degraded defect if *sdsfmode* is set to BURST. If *sdsfmode* is not set to BURST then *brstintvl* has no affect to NE behaviour.

Type: integer..

Range: 2, 3, ..., 10 [seconds].

Default: 7 [seconds].

2. brstthr - Bursty Error Threshold

This parameter specifies the degradation threshold for degraded defect if *sdsfmode* is set to BURST. If *sdsfmode* is not set to BURST then *brstthr* has no affect to NE behaviour.

Type: integer.

Range: 5, 10, 15, ... 50 [%].

Default: 30 [%].



7. feppm - Far End Path PM Enable  
This parameter specifies whether the performance monitoring for the far end is enabled or disabled for this tributary.  
Type: alphanumeric value set.  
Range: DISABLE (default), ENABLE.
8. hptimais - HP Trace Identifier Mismatch AIS Insertion  
This parameter specifies if a detected TIM will cause AIS insertion. This parameter is relevant only if the related trace read format *ptrcrfmt* is set to 16 (16-byte-specific-string mode).  
Type: alphanumeric value set.  
Range: DISABLE , ENABLE.  
Default: The default value depends on interface standard specified by *istd* for the VCG owning this tributary. For definition of *istd* refer to “RTRV-VCG: Retrieve virtual concatenation group” (7-176) Output parameters. DISABLE, if *istd*=SONET; ENABLE, if *istd*=SDH.
9. hptimmon - HP Trace Identifier Mismatch Monitor  
This parameter specifies if the mode of the TIM detection. This parameter is relevant only if the related trace read format *ptrcrfmt* is set to 16 (16-byte-specific-string mode).  
Type: alphanumeric value set.  
Range: DISABLE (default), ENABLE.
10. inmbs - Input Membership  
This parameter specifies if the tributary shall take part to the transmission of its owning VCG in input direction. The addressing scheme of the tributaries by using VCGNumAIDs is ensuring that only legal AIDs are used. So no consideration about the 'illegal' tributaries (e.g. 1-1-#-#-1-1-3 for VC-4) is necessary.  
Type: alphanumeric value set.  
Range: DISABLE , ENABLE.  
Default: DISABLE. The VCG has as default the size 0, i.e. it has no member. So the default for the parameter above for VCGTRIB needs to be DISABLE.
11. inmbst - Input Member Status  
This parameter reports the status of the tributary related to its VCG membership in input direction.  
Type: alphanumeric value set.

Range:

- NA, for not applicable, i.e. the trib. is no member of the VCG
- ADD, the tributary is in the LCAS state "Wait-for-Add", "Add" or "Wait-for-ACK"
- ACTIVE, the tributary is member of the VCG and working
- DNU, the tributary is member of the VCG but taken off by LCAS (incoming failed condition for the sink tributary)
- UNAVAILABLE, for not available, i.e. the trib. is member of the VCG but the current data is not retrievable for any reason.

The state DNU can only be reported if *lcasmd* is set to ENABLE for the VCG owning this tributary. For parameter *lcasmd* refer to the Output parameters section of "RTRV-VCG: Retrieve virtual concatenation group" (7-176). For a detailed explanation of the ADD state in the LCAS protection scheme, please refer to SRD\_DATA\_Virtual\_Concatenation.

12. neppm - Near End Path PM Enable

This parameter specifies whether the performance monitoring for the near end is enabled or disabled for this tributary.

Type: alphanumeric value set.

Range:

- DISABLE (default)
- ENABLE.

13. outmbs - Output Membership

This parameter specifies if the tributary shall take part to the transmission of its owning VCG in input direction.

Type: alphanumeric value set.

Range:

- DISABLE
- ENABLE.

Default: DISABLE. The VCG has as default the size 0, i.e. it has no member. So the default for the parameter above for VCGTRIB needs to be DISABLE.

14. outmbst - Output Member Status

This parameter reports the status of the tributary related to its VCG membership in output direction.

Type: alphanumeric value set.

Range:

- NA, for not applicable, i.e. the trib. is no member of the VCG
- ADD, the tributary is in the LCAS state "Wait-for-Add", "Add" or "Wait-for-ACK"
- ACTIVE, the tributary is member of the VCG and working
- FAILE, the tributary is member of the VCG but not working due to a failure condition. Includes period during "Hold-Off".
- WTR, failure condition has cleared, tributary is in wait to restore condition.
- UNAVAILABLE, for not available, i.e. the trib. is member of the VCG but the current data is not retrievable for any reason.

The state WTR can only be reported if lcasmd is set to ENABLE for the VCG owning this tributary. For parameter lcasmd refer to RTRV-VCGR Output Parameters. For a detailed explanation of the ADD state in the LCAS protection scheme, please refer to SRD\_DATA\_Virtual\_Concatenation.

15. pmhpfeses - PM HP Far End SES Threshold

This parameter specifies the Higher Order Path Far End Severely Errored Seconds Performance Monitoring Threshold for errored frames. If errored frames are crossing this threshold this will result in an SES count for the far end. The behaviour depends on interface standard specified by *istd* for the VCG owning this tributary. For definition of *istd* refer to the output parameters section of "RTRV-VCGR: Retrieve virtual concatenation group" (7-176). If *istd* is not set to SDH then *pmhpfeses* has no affect to NE behaviour.

Type: integer.

Range: 1, 2, 3, ..., 63998, 63999, 64000, includes SDH/SONET range.

Default: 2400.

16. **pmhpneses** - PM HP Near End SES Threshold  
This parameter specifies the Higher Order Path Near End Severely Errored Seconds Performance Monitoring Threshold for errored frames. If errored frames are crossing this threshold this will result in an SES count for the near end. The behaviour depends on interface standard specified by **istd** for the VCG owning this tributary. For definition of **istd** refer to the output parameters section of “RTRV-VCG: Retrieve virtual concatenation group” (7-176). If **istd** is not set to SDH then **pmhpneses** has no affect to NE behaviour.  
Type: integer.  
Range: 1, 2, 3, ..., 63998, 63999, 64000, includes SDH/SONET range.  
Default: 2400.
17. **ptca** - Path TCA Profile Pointer  
This parameter specifies the name of the threshold crossing alert (TCA) profile used for this tributary.  
Type: alphanumeric string.  
Range: 1 ... 24 characters.  
Default: DEFAULT0.
18. **ptpn** - Path Terminating ASA Profile Name  
This parameter points to a tributary ASAP profile name **pfname** for the designated AID.  
Type: alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: 1 ... 24 characters.  
Default: DEFAULT.
19. **ptrc** - Incoming Path Trace  
This parameter reports the accepted higher order path trace identifier (J1). The length depends on the value of the parameter **ptrcrfmt**. The status of this value is contained in parameter **ptrcst**. If **ptrcst** indicates NORMAL, then **ptrc** contains a valid value. If **ptrcst** indicates UNAVAILABLE or AIS, then no valid incoming path trace identifier could be obtained by the system, e.g. due to not meeting the basic acceptance criteria or intra-NE communication problems, and the output parameter **ptrc** is omitted from the response.  
Type: hexadecimal.

Range: the range depends on the parameter `ptrcrfmt` specified in RTRV-VCGTRIB Output Parameters

- 2 hexadecimal digits, if `ptrcrfmt=2`
- 32 hexadecimal digits, if `ptrcrfmt=16`
- 128 hexadecimal digits, if `ptrcrfmt=64`.

20. `ptrcrfmt` - Path Trace Read Format

This parameter specifies the format of the path trace (J1 byte) to be received (sink).

Type: numeric string.

Range:

- 2, for non-specific repeating byte
- 16, for 16 byte specific string
- 64, for 64 byte string.

Default: 2.

21. `ptrcst` - Status of Incoming Path Trace

This parameter shows the status of the value of the incoming Path Trace Identifier (J1) which is available with parameter ***ptrc***.

Type: alphanumeric value set.

Range:

- NORMAL, ***ptrc*** contains a valid value
- UNAVAILABLE, no valid value for ***ptrc*** could be obtained by the system
- AIS , no valid value for ***ptrc*** could be obtained due to SF condition.

22. `ptrcwfmt` - Path Trace Write Format

This parameter specifies the format of the path trace (J1 byte) to be sent (source).

Type: numeric string.

Range:

- 2, for non-specific repeating byte
- 16, for 16 byte specific string
- 64, for 64 byte string.

Default: 2.

23. rsiglb - Received Signal Label  
This parameter reports the accepted trail signal label (C2). The parameter shall not be reported if the *trailst* parameter indicates a fail condition, i.e. has the value AIS or UNAVAILABLE.  
Type: alphanumeric value set.  
Range: 00, 01, ..., FE, FF, i.e. two hexadecimal digits.
24. sdsfmode - Signal Degrade/Signal Fail Mode  
This parameter specifies the determination mode of degraded defect for transmission.  
Type: alphanumeric value set.  
Range: BURST or POISSON.  
Default: The default value depends on interface standard specified by istd for the VCG owning this tributary. For definition of istd refer to RTRV-VCG Output Parameters. POISSON, if *istd*=SONET BURST, if *istd*=SDH.
25. tcamd - TCA mode  
This parameter is only available for SDH mode. This means the modifier must be VC. The parameter shows the modus of the PM thresholding. Two thresholding methods are applicable for SDH: TR-only (also known as the implicit reset method), TR-RTR (also known as the explicit reset method). For SONET the parameter tcamd does not exist. SONET ports only support "TR-only" mode. Thus the mode must be internally set to "TR-only".  
Type: alphanumeric value set.  
Range: TR, TRRTR.  
Default: SDH mode: TRRTR. SONET mode: TR (internal). For SONET the parameter tcamd does not exist. SONET ports only support "TR-only" mode. Thus the mode must be internally set to "TR-only".
26. tmonmd - Tributary Monitoring Mode  
This parameter specifies the monitoring mode for the tributary.  
Type: alphanumeric value set.  
Range: MON or NMON (default).
27. trailst - Trail Status  
This parameter reports the accepted trail status value.  
Type: alphanumeric string.



Range:

- AIS, for Alarm Indication Signal in case of Trail Signal Fail Condition
- UNAVAILABLE, for unavailable
- NORMAL.

28. *trc* - Outgoing Path Trace

This parameter specifies the path trace (J1) to be sent (source). For the 16 byte path trace format the following syntactical rule shall be applied: The first byte value shall be in the range from 80 to FF (MSB always set to 1). The other byte values shall be in the range from 00 to 7F (MSB always set to 0). This parameter is irrelevant if the format is non-specific repeating byte (*ptrcwfmt*=2).

Type: hexadecimal number without a preceding H'.

Range: the range depends on the parameter *ptrcwfmt* specified in RTRV-VCGTRIB Output parameters length

- 32, hexadecimal digits, if *ptrcwfmt*=16
- 128, hexadecimal digits, if *ptrcwfmt*=64
- value: specific string acc. ITU/ETSI mode 1, if *ptrcwfmt*=16; 64 byte string, if *ptrcwfmt*=64.

Default: 00. This implies also that *ptrcwfmt* is set to 2. Refer to [18] for details.

29. *tslmmmon* - Trail Signal Label Mismatch Monitor

This parameter specifies the mode of the TSL mismatch detection.

Type: alphanumeric value set.

Range:

- DISABLE
- ENABLE (default).

**Detailed behavior  
description**

The RTRV-VCGTRIB does not generate a REPT DBCHG message. The command retrieves all port parameter as described in section Output parameters.

**Dependencies**

*brstintvl* and *brstthr* are only meaningful if *sd fsmode* is set to BURST. *degthr* and *dexcth* are only meaningful if *sd fsmode* is set to POISSON.

Parameters which are not meaningful at the moment are reported with their default values, nevertheless.

**Example input/output**

```
RTRV-VCGTRIB-STS:LT-UNITE:1-1-#-#-1-V2-4:123456;
LT-UNITE 00-11-11 11:11:00
M 123456 COMPLD
"1-1-#-#-1-v2-4::aseqno=2,tseqno=2"
"1-1-#-#-1-v2-4,STS::brstintvl=7,brstthr=30,
crslbkstat=NO,degthr=-6",dexcthr=-3,hptimais=ENABLE,
exhptrc=89000000000000000000000000000000,
hptimmon=DISABLE,inmbs=DISABLE,inmbst=NA,
outmbs=DISABLE,outmbst=NA,ptpn=DEFAULT,ptrc=00,
ptrcrfmt=1,ptrcst=NORMAL,ptrcwfmt=1,rsiglb=1B,
sdsfmode=BURST,tmonmd=NMON,trailst=NORM,trc=00,
tslmmmon=ENABLE"
;

RTRV-VCGTRIB-STS:LT-UNITE:1-1-#-#-1-V2-all:123456;
LT-UNITE 00-11-11 11:11:00
M 123456 COMPLD
"1-1-#-#-1-v2-1,STS::brstintvl=7,brstthr=30,
crslbkstat=NO,degthr=-6",dexcthr=-3,hptimais=ENABLE,
exhptrc=89000000000000000000000000000000,
hptimmon=DISABLE,inmbs=DISABLE,inmbst=NA,
outmbs=DISABLE,outmbst=NA,ptpn=DEFAULT, ptrcrfmt=1,
ptrcwfmt=1,sdsfmode=BURST,tmonmd=NMON,trc=00,
tslmmmon=ENABLE"
"1-1-#-#-1-v2-3,STS::brstintvl=7,brstthr=30,
crslbkstat=NO,degthr=-6",dexcthr=-3,hptimais=ENABLE,
exhptrc=89000000000000000000000000000000,
hptimmon=DISABLE,inmbs=DISABLE,inmbst=NA,
outmbs=DISABLE,outmbst=NA,ptpn=DEFAULT,
ptrcrfmt=1,ptrcwfmt=1,sdsfmode=BURST,tmonmd=NMON,
trc=00,tslmmmon=ENABLE"
<listing all VCGTRIB's of this VCG>
"1-1-#-#-1-v2-21,STS::brstintvl=7,brstthr=30,
crslbkstat=NO,degthr=-6",dexcthr=-3,hptimais=ENABLE,
exhptrc=89000000000000000000000000000000,
hptimmon=DISABLE,inmbs=DISABLE,inmbst=NA,
outmbs=DISABLE,outmbst=NA,ptpn=DEFAULT,
ptrcrfmt=1,ptrcwfmt=1,sdsfmode=BURST,tmonmd=NMON,
```

```
trc=00,ts1mmon=ENABLE"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-VCGTRIB command, too.

**Check CCB against *istd* of related VCG**

Check whether the CCB fits to *istd* of the related VCG.

Error code: ICNV - Input, Command Not Valid, Interface Standard does not match.

E.g. DENY, if a command with *modifier*=VC is made on a port which is provisioned as *istd*=SONET.

**Related TL1 messages**

- “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)
- “OPR-VCGTRIB: Operate virtual concatenation group tributary” (7-229)



## ENT-VCGTRIB notification

---

**Output format** The ENT-VCGTRIB notification uses the general format of a REPT DBCHG Report Database Change notification.

Syntax: The ENT-VCGTRIB notification has the following specific syntax:

ENT-VCGTRIB-modifier:*aid::spec\_block*;

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
2. modifier  
This parameter specifies the type of the tributary.  
Type: alphanumeric value set.  
Range: STS, VC.

#### Spec block parameters

1. brstintvl - Bursty Interval  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
2. brstthr – Bursty Error Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
3. crslpbkstat – Cross-connect Loopback Status  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
4. degthr – Signal Degrade Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
5. dexcthr – Excessive Degrade Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
6. exphptrc – Expected HP trace identifier  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

7. feppm – Far End Path PM Enable  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
8. hptimais – HP Trace Identifier Mismatch AIS Insertion  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
9. hptimmon - HP Trace Identifier Mismatch Monitor  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
10. inmbs - Input Membership  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
11. inmbst - Input Member Status  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
12. neppm - Near End Path PM Enable  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
13. outmbs - Output Membership  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
14. outmbst - Output Member Status  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
15. pmhpfeses - PM HP Far End SES Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
16. pmhpnese - PM HP Near End SES Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
17. ptca - Path TCA Profile Pointer  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
18. ptpn - Path Terminating ASA Profile Name  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

19. ptrcrfmt - Path Trace Read Format  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
20. ptrcwfmt - Path Trace Write Format  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
21. sdsfmode - Signal Degrade/Signal Fail Mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
22. tcamd - TCA mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
23. tmonmd - Tributary Monitoring Mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
24. trc - Outgoing Path Trace  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
25. tslmmon - Trail Signal Label Mismatch Monitor  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

### Example output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:ENT-VCGTRIB-STs:
1-1-#-#-2-V1-4:: brstintvl=7,brstthr=30,
crslbkstat=NO,degthr=-6,dexcthr=-3,hptimais=DISABLE,
exphptrc=89000000000000000000000000000000,
hptimmon=DISABLE,inmbs=DISABLE,inmbst=NAV,
outmbs=DISABLE,outmbst=NAV,ptpn=DEFAULT,
ptrcrfmt=1,ptrcwfmt=1,sdsfmode=BURST,tmonmd=NMON,
trc=00,tslmmon=ENABLE"
;
```



## ED-VCGTRIB: Edit virtual concatenation group tributary

---

The ED-VCGTRIB command modifies the properties of a virtual concatenation group tributary.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): P3

Priority: 1

Abortable: No

**Input format** Command Syntax: ED-VCGTRIB-*modifier:tid:aid:ctag:::spec\_block;*

### Input parameters

#### Command parameters

1. **modifier**  
This parameter specifies the type of the tributary.  
Type: alphanumeric value set.  
Range: STS, VC.
2. **tid - Target Identifier**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. **aid - Access Identifier**  
The access identifier shall specify the VCG tributary whose attributes are to be modified.  
Type: AID  
Range: VCGNumAID as defined in AID structure, i.e. the value all is allowed for Simple\_VCGNumAID. For Simple\_VCGAID there shall be no *vall* value and for Simple\_UnivSlotAID there shall be no *usall* value.
4. **ctag - Correlation Tag**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

### **Spec block parameters**

1. brstintvl - Bursty Interval  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
2. brstthr - Bursty Error Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
3. degthr - Signal Degrade Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
4. dexcthr - Excessive Degrade Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
5. exphptrc - Expected HP trace identifier  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
6. feppm - Far End Path PM Enable  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
7. hptimais - HP Trace Identifier Mismatch AIS Insertion  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
8. hptimmon - HP Trace Identifier Mismatch Monitor  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
9. inmbs - Input Membership  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
10. neppm - Near End Path PM Enable  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
11. outmbs - Output Membership  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
12. pmhpfeses - PM HP Far End SES Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.



13. pmhpneses - PM HP Near End SES Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
14. ptca - Path TCA Profile Pointer  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
15. ptpn - Path Terminating ASA Profile Name  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
16. ptrcrfmt - Path Trace Read Format  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
17. ptrcwfmt - Path Trace Write Format  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
18. sdsfmode - Signal Degrade/Signal Fail Mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
19. tcamd - TCA mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
20. tmonmd - Tributary Monitoring Mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
21. trc - Outgoing Path Trace  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
22. tslmmon - Trail Signal Label Mismatch Monitor  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

**Output format** If the NE fully complies with the ED-VCGTRIB request, the following normal completion response shall be returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Detailed behaviour description

The ED-VCGTRIB generates a REPT DBCHG message.

The command modifies the attributes (listed in the spec\_block parameters part of this command) of the addressed port entity according to the parameters given with this command.

The parameters *brstintvl*, *brstthr*, *degthr* and *dexcthr* shall be modifiable also if they are not meaningful at the moment. The modification is reported by means of an ED-VCGTRIB notification.

#### Dependencies

*brstintvl* and *brstthr* are only meaningful if sdfsmode is set to BURST. *degthr* and *dexcthr* are only meaningful if sdfsmode is set to POISSON.

#### Update affected entities

A change of the value of one of the parameters *inmbs* and *outmbs* shall trigger the report of *inmbst* and *outmbst* of the corresponding VCGTRIB via an autonomous notification.

#### Disabling of PM monitor

See detailed behavior specification in “ED-STM16: Edit STM16 port” (5-334).

#### Threshold settings for all VCG Tributaries related to one VCG

Setting one of the parameters *brstintvl*, *brstthr*, *degthr*, *dexcthr*, *sdsfmode* for one VCG Tributary causes that this parameter is set to the same value for all other VCG Tributaries related to the same VCG. The respective notifications shall be sent.

#### Example input/output

```
ED-VCGTRIB-VC:LT-UNITE:1-1-#-#-1-v1-1:123456:::tmonmd=NMON;
    LT-UNITE 00-11-11 11:11:00
M 123456 COMPLD
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ED-VCGTRIB command.

**Validation rule: ASAP profile exists**

Check of the existence of the ASAP profile.

Error code: IDNV - Input, Data Not Valid, ASAP profile does not exist

**Validation rule: TCA profile exists**

See definition of validation rule in “ED-STM16: Edit STM16 port” (5-334).

**Validation rule: supply of transmitted path trace**

Check that a transmit path trace (*trc*) is supplied, too, if the path trace mode is changed.

Error code: IDNC - Input, Data, Not Consistent, a new *trc* must also be supplied for a path trace mode change.

**Validation rule: transmitted path trace length**

Check that a length of the transmit path trace (*trc*) fits to the length given by path trace mode, i.e. write format (*ptrcwfmt*).

Error code: IDNC - Input, Data, Not Consistent, *trc* length must match the given path trace mode.

**Validation rule: Maximum number of enabled PM monitors**

Check that the number of enabled PM monitors is less than the maximum number of supported enabled PM monitors (2000) before a new PM monitor is enabled.

Error code: SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded.

Since several monitor points can be enabled/disabled within one command, the ED command may only fail if the validation rule is not met after all PM enable attributes would have been updated as specified in the corresponding ED request.

Example: The ED command requests that 1 monitor point is enabled and 1 monitor points is disabled and currently 2000 packages are enabled. This command should complete.

**Validation Rule: Correct state of tributary for being added (Sink)**

Check that the tributary to be added for transmission in sink direction is in the inactive state (NA, not applicable).

Error code: ICNV - Input, Command Not Valid, *outmbst* not NA.

For the detailed description of the LCAS protocol refer to  
SRD\_Data\_VirtualConcatenation.

**Validation Rule: Correct state of tributary for being added  
(Source)**

Check that the tributary to be added for transmission in source  
direction is in the inactive state (NA, not applicable).

Error code: ICNV - Input, Command Not Valid, inmbst not NA

For the detailed description of the LCAS protocol refer to  
SRD\_Data\_VirtualConcatenation.

**Validation Rule: LCAS failure of protocol present in sink direction**

Check if a tributary is going to be added for transmission under active  
LCAS that no failure of the LCAS protocol is present in receive  
direction.

Error code: ICNV - Input, Command Not Valid, Protocol  
Failure in Receive Direction.

For the detailed description of the LCAS protocol refer to  
SRD\_Data\_VirtualConcatenation.

**Validation Rule: LCAS failure of protocol present in source  
direction**

Check if a tributary is going to be added for transmission under active  
LCAS that no failure of the LCAS protocol is present in transmit  
direction.

Error code: ICNV - Input, Command Not Valid, Protocol  
Failure in Transmit Direction.

For the detailed description of the LCAS protocol refer to  
SRD\_Data\_VirtualConcatenation.

**Check CCB against istd of related VCG**

See definition of Error responses in “RTRV-VCGTRIB: Retrieve  
virtual concatenation group tributary” (7-202).

**Related TL1 messages**

- “RTRV-VCGTRIB: Retrieve virtual concatenation group  
tributary” (7-202)
- “OPR-VCGTRIB: Operate virtual concatenation group tributary”  
(7-229).



## ED-VCGTRIB notification

---

**Output format** The ED-VCGTRIB notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The ED-VCGTRIB notification has the following specific syntax:

ED-VCGTRIB:*aid,aidtype::spec\_block;*

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
2. aidtype – Access Identifier Type  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

#### Spec block parameters

1. brstintvl – Bursty Interval  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
2. brstthr – Bursty Error Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
3. crslpbkstat – Cross-connect Loopback Status  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
4. degthr - Signal Degrade Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
5. dexcthr - Excessive Degrade Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
6. exphptrc - Expected HP trace identifier  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

7. feppm - Far End Path PM Enable  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
8. hptimais - HP Trace Identifier Mismatch AIS Insertion  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
9. hptimmon - HP Trace Identifier Mismatch Monitor  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
10. inmbs - Input Membership  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
11. inmbst - Input Member Status  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
12. neppm – Near End Path PM Enable  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
13. outmbs – Output Membership  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
14. outmbst - Output Member Status  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
15. pmhpfeses - PM HP Far End SES Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
16. pmhpnese - PM HP Near End SES Threshold  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
17. ptca - Path TCA Profile Pointer  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
18. ptpn - Path Terminating ASA Profile Name  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

19. ptrcrfmt - Path Trace Read Format  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
20. ptrcwfmt - Path Trace Write Format  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
21. sdsfmode - Signal Degrade/Signal Fail Mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
22. tcamd - TCA mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
23. tmonmd - Tributary Monitoring Mode  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
24. trc – Outgoing Path Trace  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.
25. tslmmon - Trail Signal Label Mismatch Monitor  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

### Example output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:ED-VCGTRIB:1-1-#-#-1-V1-
1,STS::outmbs=ENABLE"
;
```



## DLT-VCGTRIB notification

---

**Output format** The DLT-VCGTRIB notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The DLT-VCGTRIB notification has the following specific syntax:

DLT-VCGTRIB:*aid*;

### Output parameters

#### Command parameters

1. aid – Access Identifier  
See definition at “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202), Output parameters.

### Example output

```
LT-UNITE 00-11-11 11:11:00
A 001 REPT DBCHG
"TIME=11-10-30,DATE=00-11-11:DLT-VCGTRIB:1-1-#-#-1-V1-
1&&-21"
;
```





## OPR-VCGTRIB: Operate virtual concatenation group tributary

---

The OPR-VCGTRIB command allows to preempt a running wait-to-restore at a VCG tributary. The wait-to-restore status is part of the LCAS protection scheme.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 1  
Abortable: No

**Input format**      Command Syntax: OPR-VCGTRIB-modifier:*tid:aid:ctag::sc;*

### Input parameters

#### Command parameters

1.    modifier  
      This parameter specifies the type of the tributary.  
      Type: alphanumeric value set.  
      Range: STS, VC
2.    tid – Target Identifier  
      Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3.    aid – Access Identifier  
      See definition at “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219), Input parameters
4.    ctag – Correlation Tag  
      Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
5.    sc – switch command  
      The parameter *sc* specifies the switch action applied to the VCG tributary.  
      Type: alphanumeric value set.  
      Range: CLRWRT.

**Output format**      If the NE fully complies with the OPR-VCGTRIB request, the following normal completion response shall be returned:

sid date time

```
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behaviour  
description**

The command shall preempt the wait-to-restore timer of the VCG tributary, addressed. State changes caused by this preemption are reported according an autonomous ED-VCGTRIB notification for this VCGTRIB for the parameter *inmbst*.

**Example input/output**

```
OPR-VCGTRIB-VC:LT-UNITE:1-1-#-#-1-v1-2:123456::CLRWTR;
    LT-UNITE 00-11-11 11:11:00
M 123456 COMPLD
;
```

**Error responses**

Refer to the RTRV-HDR command Error responses section. The error responses listed there apply to the OPR-VCGTRIB command.

**Validation Rule: wait-to-restore is not pending**

Check that addressed tributary is in state wait-to-restore if parameter *sc=CLRWTR* is applied.

Error code: SNVS - Status, Not in Valid State, tributary is not in state wait-to-restore.

**Related TL1 messages**

- “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202)
- “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)



## Autonomous notifications

---

|                                                   |                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GE1 Circuit Pack is auto-provisioned</b>       | <p>If a GE1 circuit pack is auto-provisioned 7 VC4 or 21 STS1 VCGTRIB instances will be created (dependent on the attribute <i>istddflt</i>) with the given default parameter values for all VCGs of the circuit pack.</p> <p>This change is reported via the ENT-VCGTRIB notification.</p>                                   |
| <b>Group notifications for VCG tributaries</b>    | <p>Refer to the Detailed behavior of the ENT-EQPT (slot) command for details on grouped notifications for VCG tributaries.</p>                                                                                                                                                                                                |
| <b>Incoming VCG tributary is dropped or added</b> | <p>If an incoming (sink direction) VCG tributary is dropped or added due to manual operation or a failure event, the parameter <i>outmbst</i> shall be set to the corresponding value considering the current LCAS mode. This change shall be reported via the ED-VCGTRIB notification with the parameter <i>outmbst</i>.</p> |
| <b>Outgoing VCG tributary is dropped or added</b> | <p>If an outgoing (source direction) VCG tributary is dropped or added due to manual operation or a failure event, the parameter <i>inmbst</i> shall be set to the corresponding value considering the current LCAS mode. This change shall be reported via the ED-VCGTRIB notification with the parameter <i>inmbst</i>.</p> |



# Remote Test Access

## Overview

---

**Purpose** Test access consists of a set of non-intrusive operations (“monitoring” modes) and intrusive operations (“split modes”) that aid users in turning up facilities and in fault sectionalization of existing service circuits.

Basic user capabilities in test access include:

- assigning available tributary(ies) as “test access tributary(ies)”, whose line interface(s) will be connected by the user to the external testing system. These test access tributaries are assigned and released as part of establishing or disconnecting test access sessions.
- establishing test access cross-connections from tributaries to be tested to the test access tributary(ies) that either monitor or “split” connections for testing purposes.
- retrieving information about test access connections present on the system.
- releasing test access connections and test tributaries, upon which the system automatically restores any pre-existing cross-connections that were affected.

The architecture and nomenclature depicted below help to explain how test access is defined and used.

The E-Tributary and F-Tributary are the tributaries under test. The E and F tributaries are the ends of a one-way or two-way cross-connection, with the dashed lines indicating the signal traveling through the system. The signal path from the E-end to the F-end is referred to as the “A” direction; the opposite direction as the “B” direction. If there is only a one-way cross-connection, the signal travels in the A direction. If an idle (un-cross-connected) tributary is the focus of test access, it is always the E-end.

The following table shows the supported test access modes.

Two groups of test access modes are defined:

- single test access tributary modes

- dual test access tributary modes.

| Mode   | Description                                                                                                                                                                                                          | Group  |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| MONE   | Monitor E-end mode of test access. This test access mode monitors the E end of an idle tributary or a leg of a cross-connection.                                                                                     | Single |
| MONF   | Monitor F-end mode of test access. This test access mode monitors the F-end of a two-way cross-connection.                                                                                                           | Single |
| MONEF  | Monitor E-end and F-end mode of test access. This test access mode monitors (E end and F end) both directions of a 2WAY cross-connection.                                                                            | Dual   |
| SPLTE  | Split access E-end mode of test access. This test access mode splits the connection between the E end and F end of a 1WAY cross-connection or a leg of 2WAY cross-connection. Can also be used in an idle tributary. | Single |
| SPLTF  | Split access F-end mode of test access. This test access mode splits the E-end and F-end connection of a two-way cross-connection to allow testing at the F-end.                                                     | Single |
| SPLTEF | Split E-end and F-end mode of test access. This test access mode splits both directions of a 2WAY cross-connection to allow testing at both the E end and F end.                                                     | Dual   |

| Mode   | Description                                                                                                                                                                                                                                                                                                                                                 | Group  |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| SPLTA  | Split access “A” direction mode of test access. This test access mode splits the connection between the E and F tributaries of a one-way or two-way cross-connection to allow testing in the “A” direction.                                                                                                                                                 | Single |
| SPLTB  | Split access “B” direction mode of test access. This test access mode splits the E-end and F-end connection of a two-way cross-connection to allow testing in the “B” direction.                                                                                                                                                                            | Single |
| SPLTAB | Split access A and B directions mode of test access. This test access mode splits both directions of a two-way cross-connection to allow testing in both the A and B directions.                                                                                                                                                                            | Dual   |
| TERME  | Terminated test access mode. This test access mode splits the signal, sending the input to the testing system and injecting AU-AIS/AIS-P toward the path selector to allow monitoring the incoming signal of the leg that is not currently carrying service traffic without the risk that the path selector will switch away from the service-carrying leg. | Single |

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|                                   |                       |
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| DISC-TACC notification            | <a href="#">7-255</a> |



## RTRV-TACC: Retrieve test access

---

**General** The RTRV-TACC command is used to retrieve the test access-related information on one or all of the test tributaries in the NE. Only the primary test tributary is retrieved.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T1  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax: RTRV-TACC-*modifier*:*tid*:*aid*:*ctag*;

### Input parameters

#### Command parameters

1. *modifier*

This parameter indicates the cross-connection rate on which the retrieve test access command is to act.

A distinction of the modifier usage has to be made between the retrieval (RTRV-TACC-*modifier*) and the other test access related commands (CONN-TACC-*modifier*, DISC-TACC-*modifier*, CHG-ACCMD-*modifier*):

- The establishment (CONN-TACC-*modifier*), removal (DISC-TACC-*modifier*) or modification (CHG-ACCMD-*modifier*) of test access sessions is independent of the provisioned port interface-standard. I.e., either the SDH-rates (VC3, VC4 etc.) or the corresponding SONET-rates (STS1, STS3 etc.) can be used as modifier and no command validation between port interface-standard and modifier will be performed.
- For the RTRV-TACC-*modifier* command the following holds: Again, no command validation between port interface-standard and modifier will be performed. The output parameter *rate*, however, is filled with the *rate* which was used with the CONN-TACC-*modifier* command.

Type: alphanumeric value set.



Range:

- ALL
  - SDH modifier: VC3, VC4, VC44C, VC416C, VC464C
  - SONET modifier: STS1, STS3, STS12, STS48, STS192.
2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
  3. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** In response to a valid RTRV-TACC command, the following output report shall be returned:

```
sid date time
M ctag COMPLD
"tatrib1:rate[:spec_block]"
...
...
"tatrib1:rate[:spec_block]"
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

The NE returns the following normal completion response for a successful RTRV-TACC command if no test access activity is found on the specified tributaries in the system:

```
sid date time
M ctag COMPLD
;
```

This output format is only valid if 'all' is used in the *aid*. Otherwise the validation rule leads to an error message.

## Output parameters

### Command parameters

1. **tatrib1** – primary Test Access Tributary  
AID of the primary test access tributary. The keyword "all" is not allowed on any level.  
Type: AID.  
Range: STS1NumAID.
2. **rate** – Test Access rate  
This parameter specifies the rate of the signal that is being tested.  
Type: alphanumeric value set.  
Range: VC3, VC4, VC44C, VC416C, VC464C, STS1, STS3, STS12, STS48, STS192.

### Spec block parameters

1. **eomode** – output mode of the E-tributary  
This parameter is only present if the test session is created on a 2-way cross-connection. The parameter is omitted for test sessions on 1-way cross-connections or on idle E-tributaries.  
Type: alphanumeric value set.  
Range:
  - **NORM**: this is the normal output i.e. the signal from the F-tributary is passed through to the E-tributary
  - **AIS**: this mode outputs an AIS signal.Default:
  - **NORM**, if the referring Ttest mode does not disconnect the output of the original cross-connection to this tributary
  - **AIS**, in all other case.
2. **etrib** – AID of the E-tributary  
AID of the E-tributary for the test session.  
Type: AID.  
Range: GenTribAID.
3. **fomode** – output mode of the F-tributary  
This parameter is only present if the test session is created on a 1-way or 2-way cross-connection. The parameter is omitted for test sessions on idle E-tributaries.  
Type: alphanumeric value set.

Range:

- NORM: this is the normal output i.e. the signal from the E-tributary is passed through to the F-tributary
- AIS: this mode outputs an AIS signal.

Default:

- NORM, if the referring test mode does not disconnect the output of the original cross-connection to this tributary
- AIS, in all other cases.

4. ftrib – AID of the F-tributary

AID of the F-tributary for the test session. If there is no cross-connection at the E-tributary, this parameter is omitted.

Type: AID.

Range: GenTribAID.

5. tatrib2 – secondary Test Access Tributary

AID of the secondary Test Access Tributary. In the case of test access modes with single test tributary the parameter is omitted.

Type: AID.

Range: STS1NumAID.

6. tstmde – Test Access Mode

**Example input/output**

```
RTRV-TACC-STS1:LT-UNITE:1-1-#-#-3-1-1:123456;  
LT-UNITE 02-10-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-3-1-1:STS1:TSTMDE=MONEF,TATRIB2=1-1-#-#-4-1-  
1,ETRIB=1-1-#-#-6-1-1,EOMODE=NORM,FTRIB=1-1-#-#-7-1-  
1,FOMODE=NORM"  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-TACC command.

**Validation Rule: Tributary is not assigned as a test tributary**

If the aid is not assigned as a test tributary and 'all' is not used in the aid, the following error message shall be returned:

Error Code: SNVS - Status, Not in Valid State, tributary not assigned as a test tributary

### **Related TL1 messages**

- “CONN-TACC: Connect test access” (7-241)
- “CHG-ACCMD: Change access mode” (7-249)
- “DISC-TACC: Disconnect test access” (7-253)
- “RTRV-CRS: Retrieve cross-connection” (7-6)



## CONN-TACC: Connect test access

---

**General** The CONN-TACC command is used to initiate a Test Access session and to connect the Test Access tributaries.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T4  
Priority: 1  
Abortable: No

**Input format** Command Syntax: CONN-TACC-*modifier:tid:tatrib1:ctag:::spec\_block;*

### Input parameters

#### Command parameters

1. modifier  
This parameter indicates the cross-connection rate on which the connect test access command is to act.  
Type: alphanumeric value set.  
Range:
  - SDH modifier: VC3, VC4, VC44C, VC416C, VC464C
  - SONET modifier: STS1, STS3, STS12, STS48, STS192.
2. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. tatrib1 - primary Test Access tributary  
AID of the primary Test Access tributary. The keyword “all” shall not be allowed on any level.  
Type: AID.  
Range: STS1NumAID.
4. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

### Spec block parameters

1. etrib – AID of the E-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
2. ftrib – AID of the F-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
3. tatrib2 – secondary Test Access Tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
4. tstmde – Test Access Mode  
Type: alphanumeric value set.  
Range:
  - MONE: Monitor E-end mode of test access. This test access mode monitors the E end of an idle tributary or a leg of a cross-connection.
  - MONF: Monitor F-end mode of test access. This test access mode monitors the F-end of a two-way cross-connection.
  - MONEF: Monitor E-end and F-end mode of test access. This test access mode monitors (E end and F end) both directions of a 2WAY cross-connection.

**Output format** The NE returns the following normal completion response to a successful CONN-TACC command if there are no failure conditions to report:

```
sid date time  
M ctag COMPLD  
;
```

### Detailed behavior description

The CONN-TACC command shall be used to establish a test access(es) connection to a tributary or tributaries in the NE.

If the test access session is established as MONE or MONF, the primary test tributary is used. If the test access session is established as MONEF, the primary test tributary is designated for accessing E-end incoming signal and the secondary test tributary is designated for accessing F-end incoming signal.

If there is no connection on E-end tributary, the F-end tributary AID parameter is omitted.

If there are one or more cross-connections established on E tributary, the F-end tributary AID parameter is required to be entered.

In addition to the CONN-TACC notification an ED-CRS notification is sent to report the changed parameter values *taccstat* and *rtntaccstat*.

**Example input/output**

```
CONN-TACC-STS1:LT-UNITE:1-1-#-#-4-1-1:123456:::ETRIB=1-1-#-#-15-1-1,FTRIB=1-1-#-#-16-1-1,TSTMDE=MONE;  
LT-UNITE 02-10-01 16:39:52  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8)command error responses section. The error responses listed there also apply to the CONN-TACC command.

**Validation rule: Missing F tributary**

If the NE receives a CONN-TACC command in which there are one or more cross-connection established on the E tributary and *ftrib* is not specified, the following error response is returned:

Error Code: IDNV - Input, Data Not Valid, missing F tributary

**Validation rule: E tributary and F tributary not cross-connected**

If the NE receives a CONN-TACC command with an F tributary specified and there is no cross-connection between the E and the F tributaries, the following error response is returned:

Error Code: IDNV - Input, Data Not Valid, E and F tributaries not cross-connected

**Validation rule: MONF or MONEF test access mode not allowed on a 1WAY cross-connection from E to F tributary**

If the NE receives a CONN-TACC command with MONF or MONEF as test access mode when there is a 1WAY cross-connection on E to F tributaries, the following error response is returned:

Error Code: IDNV - Input, Data Not Valid, invalid test access mode

**Validation rule: Cross-connection exists on the test tributary**

If the NE receives a CONN-TACC command with a test tributary that has an existing cross-connection, the following error response is returned:

Error Code: IEAE - Input, Entity Already Exists,  
cross-connection exists on test tributary

**Validation rule: Test tributary already connected**

If the NE receives a CONN-TACC command with a test tributary that has an existing test access connection (to E and/or F tributary(s)) or if the CONN-TACC command is executed again with same or different attributes on the same test tributary, the following error response is returned:

Error Code: IEAE - Input, Entity Already Exists, test  
access connection exists

**Validation rule: Test tributary or E or F tributary in a loopback**

If the NE receives a CONN-TACC command with a test tributary or E or F tributary currently in a loopback, the following error response is returned:

Error Code: SNVS - Status, Not in Valid State, tributary  
has existing loopback

**Validation rule: Secondary test tributary not needed for MONE test modes**

If the NE receives a CONN-TACC command with a secondary test tributary value for a MONE test access mode, the following error response is returned:

Error Code: INUP - Input, Non-null Unimplemented Parameter,  
secondary test tributary not allowed

**Validation rule: Tributaries must exist**

If the NE receives a CONN-TACC command with a test tributary or E or F tributary that does not exist, the following error response is returned:

Error Code: IENE - Input, Entity Not Exists, Specified  
tributary/tributaries do not exist



**Validation rule: AID boundary and rate consistency**

If the NE receives a CONN-TACC command with a test tributary or E or F tributary that is not consistent with the test access rate, the following error response is returned:

Error Code: IDNC - Input, Data, Not Consistent, Tributary boundary is inconsistent with the indicated rate

Consistency implies the following condition:

- The boundary of the specified tributary is consistent with the specified rate
- STS-1/VC-3 payloads can start at any position
- The first (STS-1 equivalent) tributary of an STS-3/VC-4 rate crossconnection must be on a  $\text{mod}3 + 1$  boundary (1, 4, 7, ...)
- The first STS-1 of an STS-12/VC-4-4c rate crossconnection must be on a  $\text{mod}12 + 1$  boundary (1, 13, 25, ...)
- The first STS-1 of an STS-48/VC-4-16c rate crossconnection must be on a  $\text{mod}48 + 1$  boundary (1, 49, 97, ...)
- The first STS-1 of an STS-192/VC-4-64c rate crossconnection must be on a  $\text{mod}192 + 1$  boundary (1, 193, 385, ...).

**Validation rule: XC pack is (pre-)provisioned**

If the NE receives a CONN-TACC command while no XC pack is pre-provisioned or provisioned, the following error response is returned:

Error Code: SNVS - Status, Not in Valid State, XC Pack not provisioned

**Validation rule: Circuit pack not provisioned**

If the NE receives a CONN-TACC command with a circuit pack specified by the test tributary AID or E- or F-tributary AID that is not provisioned, the following error response is returned:

Error Code: SNVS - Status, Not in Valid State, circuit packs not provisioned

**Validation rule: Port used for MSSPRING/BLSR**

If the NE receives a CONN-TACC command with a test access tributary on a port which is used in a MSSPRING/BLSR protection group, the following error response is returned:

Error Code: SNVS - Status, Not in Valid State, port used for MSSPRING/BLSR

**Validation rule: Port used for Linear MSP**

If the NE receives a CONN-TACC command with a test access tributary on a port which is used in a Linear MSP protection group, the following error response is returned:

Error Code: SNVS - Status, Not in Valid State, port used for Linear MSP

**Validation rule: Inconsistent tributary rate**

If the NE receives a CONN-TACC command which does not match the connection rate of the connection between E and F, the following error response is returned:

Error Code: IPNC - Input, Parameter Not Consistent, Rate inconsistent with crossconnection rate

**Validation rule: All tributaries must be different**

If the NE receives a CONN-TACC command where two or more of the specified tributaries (test access tributaries, E or F tributary) are identical, the following error response is returned:

Error Code: IDNV - Input, Data Not Valid, all tributaries must be different

**Related TL1 messages**

- “RTRV-TACC: Retrieve test access” (7-236)
- “CHG-ACCMD: Change access mode” (7-249)
- “DISC-TACC: Disconnect test access” (7-253)
- “RTRV-CRS: Retrieve cross-connection” (7-6)



## CONN-TACC notification

---

**Output format** The CONN-TACC notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

The CONN-TACC notification has the following specific syntax:  
CONN-TACC-*modifier:tatrib1::spec\_block*;

### Output parameters

#### Command parameters

1. *modifier*  
See definition of input parameter *modifier* in “CONN-TACC: Connect test access” (7-241).
2. *tatrib1* – primary Test Access Tributary  
See definition of input parameter *tatrib1* in “CONN-TACC: Connect test access” (7-241).

#### Spec block parameters

1. *etrib* – AID of the E-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
2. *ftrib* – AID of the F-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
3. *tatrib2* – secondary Test Access Tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
4. *tstmde* – Test Access Mode  
See definition of input parameter *tstmde* in “CONN-TACC: Connect test access” (7-241).

### Example input/output

```
CONN-TACC-ST51:LT-UNITE:1-1-#-#-4-1-1:123456:::ETRIB=1-1-#-#-15-1-1,FTRIB=1-1-#-#-16-1-1,TSTMDE=MONE;
  LT-UNITE 02-10-01 16:39:52
M 123456 COMPLD
;
  LT-UNITE 02-10-01 16:40:22
A 001 REPT DBCHG
```

```
"TIME=16-40-04,DATE=02-10-01:CONN-TACC-STS1:1-1-#-#-4-1-1::ETRIB=1-1-#-#-15-1-1,FTRIB=1-1-#-#-16-1-1,TSTMDE=MONE:"
```

;



## CHG-ACCMD: Change access mode

---

**General** The CHG-ACCMD command shall be used to change the test access mode of a test session in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T4  
Priority: 1  
Abortable: No

**Input format** Command Syntax: CHG-ACCMD-*modifier:tid:tatrib1:ctag:::spec\_block;*

### Input parameters

#### Command parameters

1. **modifier**  
Refer to the “CONN-TACC: Connect test access” (7-241) command for the input parameter syntax and description.
2. **tid – Target Identifier**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. **tatrib1 – primary Test Access tributary**  
Refer to the “CONN-TACC: Connect test access” (7-241) command for the input parameter syntax and description.
4. **ctag – Correlation Tag**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

1. **tstmde – Test Access Mode**  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the input parameter syntax and description.

**Output format** The NE returns the following normal completion response to a successful CHG-ACCMD command if there are no failure conditions to report:

```
sid date time
M ctag COMPLD
```

;

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Detailed behaviour description</b> | <p>The function of the CHG-ACCMD command is to change the test access mode without terminating the test access session.</p> <p>The test access mode changes are restricted to test modes belonging to the same group. (See the definition of the groups in the general description.) It is not allowed to change the mode from single to dual test tributary modes or from dual to single test tributary modes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Example input/output</b>           | <pre>CHG-ACCMD-STS1:LT-UNITE:1-1-#-#-6-1-1:123456:::TSTMDE=SPLTA;<br/>LT-UNITE 02-10-01 19:17:53<br/>M 123456 COMPLD<br/>;</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Error responses</b>                | <p>Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the CHG-ACCMD command.</p> <p><b>Validation rule: No test access session on the test tributary</b></p> <p>If the NE receives a CHG-ACCMD command when there is no test access session set up on the test tributary specified, the following error response is returned:</p> <p>Error Code: SNVS - Status, Not in Valid State, no test access session on the test tributary</p> <p><b>Validation rule: Invalid test access mode change request</b></p> <p>If the NE receives a CHG-ACCMD command with a test access mode which is not a member of the same group, the following error response is returned:</p> <p>Error Code: SNVS - Status, Not in Valid State, invalid test access mode</p> <p><b>Validation rule: Inconsistent tributary rate</b></p> <p>If the NE receives an CHG-ACCMD command which does not match the test access connection rate, the following error response is returned:</p> <p>Error Code: IPNC - Input, Parameter Not Consistent, Rate inconsistent with crossconnection rate</p> |

**Related TL1 messages**

- “CONN-TACC: Connect test access” (7-241)
- “RTRV-TACC: Retrieve test access” (7-236)
- “DISC-TACC: Disconnect test access” (7-253)
- “RTRV-CRS: Retrieve cross-connection” (7-6)



## CHG-ACCMD notification

---

**Output format** The CHG-ACCMD notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The CHG-ACCMD notification shall have following specific syntax:  
CHG-ACCMD-*modifier:tatrib1::spec\_block*;

### Output parameters

#### Command parameters

1. modifier  
See definition of input parameter *modifier* in “CONN-TACC: Connect test access” (7-241).
2. tatrib1 – primary Test Access tributary  
See definition of input parameter *tatrib1* in “CONN-TACC: Connect test access” (7-241).

#### Spec block parameters

1. eomode – output mode of the E-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
2. fomode – output mode of the F-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
3. tstmde – Test Access Mode  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.

### Example input/output

```
CHG-ACCMD-STS1:LT-UNITE:1-1-#-#-6-1-1:123456:::
TSTMDE=SPLTA;
  LT-UNITE 02-10-01 19:17:53
M 123456 COMPLD
;
  LT-UNITE 02-10-01 19:18:22
A 001 REPT DBCHG
"TIME=19-18-05,DATE=02-10-01:CHG-ACCMD-STS1:
1-1-#-#-4-1-1::TSTMDE=SPLTA:"
;
```





## DISC-TACC: Disconnect test access

---

**General** The DISC-TACC command is used to remove the test access connection and terminate the test access session on the test access tributary in the NE.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): T4  
Priority: 1  
Abortable: No

**Input format** Command Syntax: DISC-TACC-*modifier:tid:tatrib1:ctag;*

### Input parameters

#### Command parameters

1. **modifier**  
Refer to the “CONN-TACC: Connect test access” (7-241) command for the input parameter syntax and description.
2. **tid – Target Identifier**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. **tatrib1 – primary Test Access tributary**  
Refer to the “CONN-TACC: Connect test access” (7-241) command for the input parameter syntax and description.
4. **ctag – Correlation Tag**  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

**Output format** The NE returns the following normal completion response to a successful DISC-TACC command if there are no failure conditions to report:

```
sid date time  
M ctag COMPLD  
;
```

**Detailed behaviour  
description**

The DISC-TACC command is used to terminate a test access session. All s to the test access tributaries will be removed and the cross-connections between the E and F tributaries are reestablished.

In addition to the DISC-TACC Notification an ED-CRS notification is sent to report the changed parameter values *taccstat* and *rtntaccstat*.

**Example input/output**

```
DISC-TACC-STS1:LT-UNITE:1-1-#-#-4-1-1:123456;  
LT-UNITE 02-10-01 17:15:08  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the DISC-TACC command.

**Validation Rule: No test access session on the test tributary**

If the NE receives a DISC-TACC command when there is no test access session set up on the test tributary specified, the following error response is returned:

Error Code: SNVS - Status, Not in Valid State, no test access session on the test tributary

**Validation Rule: Inconsistent tributary rate**

If the NE receives an DISC-TACC command which does not match the test access connection rate, the following error response is returned:

Error Code: IPNC - Input, Parameter Not Consistent, Rate inconsistent with crossconnection rate

**Related TL1 messages**

- “CONN-TACC: Connect test access” (7-241)
- “CHG-ACCMD: Change access mode” (7-249)
- “RTRV-TACC: Retrieve test access” (7-236)
- “RTRV-CRS: Retrieve cross-connection” (7-6)



## DISC-TACC notification

---

**Output format** The DISC-TACC notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

The DISC-TACC notification has the following specific syntax:  
DISC-TACC-*modifier:tatrib1::spec\_block*;

### Output parameters

#### Command parameters

1. modifier  
See definition of input parameter *modifier* in “CONN-TACC: Connect test access” (7-241).
2. atrib1 – primary Test Access tributary  
See definition of input parameter *tatrib1* in “CONN-TACC: Connect test access” (7-241).

#### Spec block parameters

1. etrib – AID of the E-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
2. ftrib – AID of the F-tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.
3. atrib2 – secondary Test Access Tributary  
Refer to the “RTRV-TACC: Retrieve test access” (7-236) command for the output parameter syntax and description.

### Example input/output

```
DISC-TACC-STs1:LT-UNITE:1-1-#-#-4-1-1:123456;
  LT-UNITE 02-10-01 17:15:08
M 123456 COMPLD
;
  LT-UNITE 02-10-01 17:15:38
A 001 REPT DBCHG
  "TIME=17-15-20,DATE=02-10-01:DISC-TACC-STs1:1-1-#-#-4-1-1:: ETRIB=1-1-#-#-15-1-1,FTRIB=1-1-#-#-16-1-1:"
;
```







# 8 TL1 messages - protection

## Overview

---

**Purpose** This chapter contains the TL1 interface definition for the domain “protection”.

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|                                                  |                       |
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# Protection group

## Overview

---

**Purpose** The protection group commands covers all types of protections within the system. The following protection group types can be distinguished:

- 1+1 equipment protection group
- 1+1 multiplex section/line protection group
- 2-fibre MS-SPRing/BLSR protection group
- 4-fibre MS-SPRing/BLSR protection group
- Path protection group.

Dedicated subsections corresponding to these protection group types will cover the specific behavior. If such a separation is not made, the description is valid for all protection group types. In addition common properties are also described in a dedicated General section.

Three operation modes can be distinguished for a 4-fibre MS-SPRing/BLSR protection group:

1. 2-sided node: An east side (protection and worker) and a west side (protection and worker) is provisioned for that group. Therefore, four ports are members within that protection group.
2. 1-sided node: Only one side is provisioned for the protection group. That can be either the east or the west side. Therefore, two ports are members within that protection group. This mode is used in context of an open 4-fiber ring w.r.t. end node in that chain.
3. Asymmetric node: Both protection ports are members of the protection group and only one or zero worker ports are assigned externally.

All attributes/parameters specifying east/or west side properties are optional and will be omitted if the corresponding side is not provisioned in case of an 1-sided node.

Note: 1-sided node (open ring) is not supported in R1. As indication if and when this feature is supported use the following criteria (supported if criteria is met): Ports can be added/removed to/from one side of the protection group (conversion from 1-side node to 2-side

node and vice versa). Be aware to differentiate that scenario from switching from an asymmetric node to a non-asymmetric and vice versa. The combination of a 1-sided and asymmetric node is not allowed..

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## Introduction to protection groups

---

**General information** The following section presents an overview of all attributes of the different protection types and their use within the different commands. The information is derived from the corresponding sections describing the commands and notifications.

Note: The following tables are specifying the superset of operations, notifications and attributes for protection groups. They do not consider any release information. Please check in the corresponding sections, in which release the functionality is supported.

**1+1 equipment protection group** Entity table for 1+1 equipment protection group (EQPTSWFBR and EQPTCTL )

| Attribute                             | Opr  | Not                | Class | Note |
|---------------------------------------|------|--------------------|-------|------|
| aid – protection group AID            | RTRV | ENT DLT<br>PROTNSW | input | (1)  |
| protype – Protection Type             | RTRV | ENT DLT<br>PROTNSW | input |      |
| wkg – Worker Unit                     | RTRV | ENT PROTNSW        | input | (2)  |
| protn – Protection Unit               | RTRV | ENT PROTNSW        | input | (2)  |
| actunit – Active Unit State           | RTRV | PROTNSW            | state | (3)  |
| swreq – Switch Request State          | RTRV | PROTNSW            | state | (3)  |
| protnsiglvl – Protection Fault Status | RTRV |                    | state |      |
| wkgsiglvl – Worker Fault Status       | RTRV |                    | state |      |

Entity table for EP155 Equipment Protection Group (EQPTEP155)

| Attribute                   | Opr               | Not                  | Class | Note |
|-----------------------------|-------------------|----------------------|-------|------|
| aid – protection group AID  | RTRV, ENT,<br>DLT | ENT, DLT,<br>PROTNSW | input | (1)  |
| protype – Protection Type   | RTRV, ENT,<br>DLT | ENT, DLT,<br>PROTNSW | input |      |
| wkg – Worker Unit           | RTRV, ENT         | ENT, PROTNSW         | input | (2)  |
| protn – Protection Unit     | RTRV, ENT         | ENT, PROTNSW         | input | (2)  |
| actunit – Active Unit State | RTRV              | PROTNSW              | state | (3)  |

| Attribute                             | Opr  | Not     | Class | Note |
|---------------------------------------|------|---------|-------|------|
| swreq – Switch Request State          | RTRV | PROTNSW | state | (3)  |
| protnsiglvl – Protection Fault Status | RTRV |         | state |      |
| wkgsiglvl – Worker Fault Status       | RTRV |         | state |      |

Note 1: protection switch events reported via REPT EVT message will use protection group aid for identification purpose.

Note 2: protection switch events reported via REPT SW message will use worker/protection unit aid for identification purpose.

Note 3: updated either via protection switch commands (OPR-PROTNSW, RLS-PROTNSW) or autonomous switch events.

Note 4: switching and controller equipment protection group is created/deleted as part of equipment provisioning.

#### Multiplex section/line protection group

Entity table for 1+1 / 1:1 multiplex section/line protection group.

| Attribute                                  | Opr                | Not                   | Class      | Note |
|--------------------------------------------|--------------------|-----------------------|------------|------|
| aid – protection group AID                 | RTRV ENT<br>ED DLT | ENT ED DLT            | input user | (1)  |
| protype – Protection Type                  | RTRV ENT<br>ED DLT | ENT ED DLT<br>PROTNSW | input      |      |
| wkg – Worker Port                          | RTRV ENT<br>ED DLT | ENT PROTNSW           | input user | (2)  |
| protn – Protection Port                    | RTRV ENT<br>ED     | ENT PROTNSW           | input user | (2)  |
| apspn – MSP-APS ASAP Pointer               | RTRV ED            | ENT ED                | user       |      |
| rme – Protection Reversion                 | RTRV ENT<br>ED     | ENT ED                | user       |      |
| wtr – Wait To Restore Time                 | RTRV ED            | ENT ED                | user       |      |
| protocol – APS Protocol                    | RTRV ENT<br>ED     | ENT ED                | user       |      |
| dcclmsprotmd – DCC Line/MS Protection Mode | RTRV ED            | ENT ED                | user       |      |
| dccrsprotmd – DCC Sect/RS Protection Mode  | RTRV ED            | ENT ED                | user       |      |
| pgrate – protection group Rate             | RTRV               | PROTNSW               | user       |      |

| Attribute                                         | Opr  | Not     | Class | Note |
|---------------------------------------------------|------|---------|-------|------|
| actunit – Active Unit State                       | RTRV | PROTNSW | state | (3)  |
| swreq – Switch Request State                      | RTRV | PROTNSW | state | (3)  |
| protnsiglvl – Protection Fault Status             | RTRV |         | state |      |
| wkgsiglvl – Worker Fault Status                   | RTRV |         | state |      |
| actunitfe – Far-End Incoming Requested Selection  | RTRV |         | state |      |
| actunitne – Near-End Outgoing Requested Selection | RTRV |         | state |      |
| aps – Far-End Incoming APS                        | RTRV |         | state |      |
| apsout – Near-End Outgoing APS                    | RTRV |         | state |      |

Note 1: AID field 'transmission protection group ID' of protection group can be specified as part of ENT-PROTN-GRP command.

Note 2: Member port can be used as alias for identification of protection group entity.

Note 3: Updated either via protection switch commands (OPR-PROTNSW, RLS-PROTNSW) or autonomous switch events.

## 2-fibre BLSR/MS-SPRing protection group

Entity table for 2-fibre BLSR/MS-SPRing protection group.

| Attribute                           | Opr                | Not                   | Class      | Note |
|-------------------------------------|--------------------|-----------------------|------------|------|
| aid – protection group AID          | RTRV ENT<br>ED DLT | ENT ED DLT            | input user | (1)  |
| protype – Protection Type           | RTRV ENT<br>ED DLT | ENT ED DLT<br>PROTNSW | input      |      |
| rid – Ring Identification           | RTRV ENT<br>ED DLT | ENT ED                | input user | (4)  |
| east – East Port                    | RTRV ENT<br>ED DLT | ENT PROTNSW           | input user | (2)  |
| west – West Port                    | RTRV ENT<br>ED DLT | ENT PROTNSW           | input user | (2)  |
| blsrpn – MSSPRING-BLSR ASAP Pointer | RTRV ED            | ENT ED                | user       |      |
| wtr – Wait To Restore Time          | RTRV ED            | ENT ED                | user       |      |

| Attribute                                        | Opr  | Not     | Class | Note |
|--------------------------------------------------|------|---------|-------|------|
| pgrate – protection group Rate                   | RTRV | PROTNSW | user  |      |
| eswreq – East Switch Request State               | RTRV | PROTNSW | state | (3)  |
| wswreq – West Switch Request State               | RTRV | PROTNSW | state | (3)  |
| ringndst – Ring Node APS State                   | RTRV |         | state |      |
| eapschst – Incoming East APS Channel Status      | RTRV |         | state |      |
| wapschst – Incoming West APS Channel Status      | RTRV |         | state |      |
| eapsdnid – Incoming East APS Destination Node Id | RTRV |         | state |      |
| wapsdnid – Incoming West APS Destination Node Id | RTRV |         | state |      |
| eapspntr – Incoming East APS Protection Path     | RTRV |         | state |      |
| wapspntr – Incoming West APS Protection Path     | RTRV |         | state |      |
| eapssnid – Incoming East APS Source Node Id      | RTRV |         | state |      |
| wapssnid – Incoming West APS Source Node Id      | RTRV |         | state |      |
| eapssw – Incoming East APS Switch Priority       | RTRV |         | state |      |
| wapssw – Incoming West APS Switch Priority       | RTRV |         | state |      |
| elprotnsw – East Last protection switch Attempt  | RTRV |         | state |      |
| wlprotnsw – West Last protection switch Attempt  | RTRV |         | state |      |

Note 1: AID field 'transmission protection group ID' of protection group can be specified as part of ENT-PROTN-GRP command.

Note 2: Member port can be used as alias for identification of protection group entity.

Note 3: Updated either via protection switch commands (OPR-PROTNSW, RLS-PROTNSW) or autonomous switch events.

Note 4: Parameter is called *newrid* in the context of ED-PROTN-GRP command.

**4-fibre BLSR/MS-SPRing protection group**

Entity table for 4-fibre BLSR/MS-SPRing protection group.

| Attribute                                   | Opr                | Not                   | Class      | Note   |
|---------------------------------------------|--------------------|-----------------------|------------|--------|
| aid – protection group AID                  | RTRV ENT<br>ED DLT | ENT ED DLT            | input user | (1)    |
| protype – Protection Type                   | RTRV ENT<br>ED DLT | ENT ED DLT<br>PROTNSW | input      |        |
| rid – Ring Identification                   | RTRV ENT<br>ED DLT | ENT ED                | input user | (4)    |
| eastwkg – East Worker Port                  | RTRV ENT<br>ED     | ENT ED<br>PROTNSW     | input user | (2)(5) |
| westwkg – West Worker Port                  | RTRV ENT<br>ED     | ENT ED<br>PROTNSW     | input user | (2)(5) |
| eastprotn – East Protection Port            | RTRV ENT<br>ED     | ENT ED<br>PROTNSW     | input user | (2)(5) |
| westprotn – East Protection Port            | RTRV ENT<br>ED     | ENT ED<br>PROTNSW     | input user | (2)(5) |
| blsrpn – MSSPRING-BLSR ASAP Pointer         | RTRV ED            | ENT ED                | user       |        |
| wtr – Wait To Restore Time                  | RTRV ED            | ENT ED                | user       |        |
| swtr – Span Wait To Restore Time            | RTRV ED            | ENT ED                | user       |        |
| protnmode – protection switch Mode          | RTRV ENT<br>ED     | ENT ED                | user       |        |
| pgrate – protection group Rate              | RTRV               | PROTNSW               | user       |        |
| eswreq – East Switch Request State          | RTRV               | PROTNSW               | state      | (3)    |
| wswreq – West Switch Request State          | RTRV               | PROTNSW               | state      | (3)    |
| eactunit – East Active Unit State           | RTRV               | PROTNSW               | state      | (3)    |
| wactunit – West Active Unit State           | RTRV               | PROTNSW               | state      | (3)    |
| ringndst – Ring Node APS State              | RTRV               |                       | state      |        |
| eapschst – Incoming East APS Channel Status | RTRV               |                       | state      |        |

| Attribute                                        | Opr  | Not | Class | Note |
|--------------------------------------------------|------|-----|-------|------|
| wapschst – Incoming West APS Channel Status      | RTRV |     | state |      |
| eapsdnid – Incoming East APS Destination Node Id | RTRV |     | state |      |
| wapsdnid – Incoming West APS Destination Node Id | RTRV |     | state |      |
| eapsprotn – Incoming East APS Protection Path    | RTRV |     | state |      |
| wapsprotn – Incoming West APS Protection Path    | RTRV |     | state |      |
| eapssnid – Incoming East APS Source Node Id      | RTRV |     | state |      |
| wapssnid – Incoming West APS Source Node Id      | RTRV |     | state |      |
| eapssw – Incoming East APS Switch Priority       | RTRV |     | state |      |
| wapssw – Incoming West APS Switch Priority       | RTRV |     | state |      |
| elprotnsw – East Last protection switch Attempt  | RTRV |     | state |      |
| wlprotnsw – West Last protection switch Attempt  | RTRV |     | state |      |

Note 1: AID field 'transmission protection group ID' of protection group can be specified as part of ENT-PROTN-GRP command.

Note 2: Member port can be used as alias for identification of protection group entity.

Note 3: Updated either via protection switch commands (OPR-PROTNSW, RLS-PROTNSW) or autonomous switch events.

Note 4: Parameter is called *newrid* in the context of ED-PROTN-GRP command.

Note 5: Port can be used as user parameter in ED-PROTN-GRP in case of adding/removing one side to/from the protection group (conversion from 1-side node to 2-side node and vice versa). It can also be used to convert a 2-side node to an asymmetric node and vice versa.

**Path protection group** Entity table for path protection group

| Attribute                             | Opr            | Not        | Class      | Note    |
|---------------------------------------|----------------|------------|------------|---------|
| aid – protection group AID            | RTRV ED<br>DLT | ENT ED DLT | input      |         |
| protype – Protection Type             | RTRV ED<br>DLT | ENT ED DLT | input      |         |
| ppgname – Path protection group Name  | RTRV ENT<br>ED | ENT ED     | input user | (1)(2)  |
| wkg – Worker Tributary                | RTRV ENT       | ENT<br>ED  | user       | (1)     |
| protn – Protection Tributary          | RTRV ENT       | ENT<br>ED  | user       | (1)     |
| dripathpn – SNCP-UPSR ASAP Pointer    | RTRV ED        | ENT ED     | user       |         |
| rme – Protection Reversion            | RTRV ENT<br>ED | ENT ED     | user       | (1)     |
| wtr – Wait To Restore Time            | RTRV ENT<br>ED | ENT ED     | user       | (1)     |
| htmr – Hold-Off Time                  | RTRV ENT<br>ED | ENT ED     | user       | (1)     |
| snctype – SNC Protection Type         | RTRV ENT<br>ED | ENT ED     | user       | (1)     |
| outtribaid – Output Tributary AID     | RTRV ENT       | PROTNSW    | user       | (1) (4) |
| cst – Constituent Signal Type         | RTRV           | PROTNSW    | user       | (1) (4) |
| actunit – Active Unit State           | RTRV           | PROTNSW    | state      | (3) (4) |
| swreq – Switch Request State          | RTRV           | PROTNSW    | state      | (3) (4) |
| actunitaid – Active Unit State AID    | RTRV           |            | state      | (3) (4) |
| protnsiglvl – Protection Fault Status | RTRV           |            | state      | (4)     |
| wkgsiglvl – Worker Fault Status       | RTRV           |            | state      | (4)     |

Note 1: Initial value has to be specified as part of ENT-CRS/ENT-ROLL command.

Note 2: Parameter is called *newppgname* in the context of ED-PROTN-GRP command.

Note 3: Updated either via protection switch commands  
(OPR-PROTNSW, RLS-PROTNSW) or autonomous switch events.





## RTRV-PROTN-GRP: Retrieve protection group

---

The RTRV-PROTN-GRP command retrieves protection group information for all existing protection group entities. The command can be used to retrieve also sets of protection groups by using ranges. The general format can be used to retrieve protection group information for different protection group types.

Input parameters for RTRV-PROTN-GRP identify the type of protection group that is of interest and also a specific member (or perhaps a range of members) of that protection group. If the specified member does not belong to a protection group, then the command returns COMPLD, but contains no information about the protection group. This means that the AID is unprotected.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes

### Input format

#### 1+1 equipment protection group

Command Syntax: RTRV-PROTN-GRP:*tid:aid:ctag::prototype*;

#### multiplex section/line protection group

Command Syntax: RTRV-PROTN-GRP:*tid:aid:ctag::prototype*;

#### 2-/4-fibre MS-SPRing/BLSR protection group

Command Syntax: RTRV-PROTN-GRP:*tid:[aid]:ctag::prototype,[rid]*;

#### Path protection group

Command Syntax: RTRV-PROTN-GRP:*tid:[aid]:ctag::prototype, , [ppgname]*;

The second comma in front of *ppgname* is needed since *rid* is omitted.

**Important!** The TL1 command RTRV-PROTN-PPG which retrieves all used path protection group names is not supported. Therefore its difficult to get an overview about all already used/defined protection group names. The operator can use the TL1 command RTRV-PROTN-GRP and use bay-shelf-#-#-all-all-all as value for the input parameter aid in order to derive all

path protection groups (see *aid* - Access Identifier in “Command parameters (path protection group)” (8-16)). Then he gets the used path protection group names per protection group in the command reply.

## Input parameters

### Command parameters (1+1 Equipment protection group)

1. tid – Target Identifier  
See definition in input parameters section in “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
Description: The parameter specifies the aid of 1+1 equipment protection group.  
Type: AID  
Range: bay-shelf-eall (range over SwitchAndTmgProtGrpAID) or SwitchAndTmgProtGrpAID (for one protection group instance) or CtlProtGroupAID (for controller protection group instance) or EP155ProtGroupAID (for EP155 protection group instance).  
Default: No default
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
The parameter specifies the type of the 1+1 equipment protection group for retrieving the information.  
Type: alphanumeric value set.  
Range:
  - ALL for all equipment protection groups/ restrictions by the used AID;
  - EQPTSWFBR for switching protection group instance;
  - EQPTCTL for controller protection group instance;
  - EQPTEP155 for EP155 protection group instance.

### Command parameters (multiplex section/line protection group)

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a 1+1 multiplex section/line protection group or the aid of a 1:1 multiplex section/line protection group (only R3.0 and later) or an port aid being a member of the group.  
Type: AID  
Range: *bay-shelf*-oall (ranged over OnePlusOne\_ProtGrpAID) or OnePlusOne\_ProtGrpAID (not ranged) or NByOne\_ProtGrpAID (not ranged) or SPortAID (not ranged)
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
This parameter specifies the architecture (type) of the protection group. The value for the 1+1 line/MS protection group is 1+1. The value for the 1:1 line/MS protection group is 1xNOPT (only R3.0 and later)  
Type: value set  
Range: 1+1 or 1xNOPT

### Command parameters (2-/4-fibre MS-SPRing/BLSR protection group)

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a MS-SPRing/BLSR protection group or an port aid being a member of the group.  
Option: If *rid* is specified, then *aid* can be omitted.  
Type: AID  
Range: *bay-shelf*-tall (ranged over TwoFibre\_ProtGrpAID) or bay-shelf-fall (ranged over FourFibre\_ProtGrpAID) or TwoFibre\_ProtGrpAID (not ranged) or FourFibre\_ProtGrpAID (not ranged) or SPortAID (not ranged).

3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
This parameter specifies the protection group type for which the information is retrieved.  
Type: alphanumeric value set  
Range: 2F or 4F
5. rid – Ring Identification  
See definition in output parameters section in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If *aid* is specified, then *rid* can be omitted.

**Command parameters (path protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies a path protection group aid or an input tributary aid being a member of the group in combination with *ppgname*.  
Option: If ppgname is specified, then *aid* can be omitted or used as an input tributary aid.  
Type: AID  
Range: bay-shelf-#-#-all-all-all (ranged over Path\_ProtGrpAID) or Path\_ProtGrpAID (not ranged) or bay-shelf-#-#-all-all-all (ranged over input STS1NumAID) or STS1NumAID (not ranged) or bay-shelf-#-#-all-all-all (ranged over input VCGNumAID) or VCGNumAID (not ranged).
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).

4. **prototype** – Protection Type  
This parameter specifies the protection group type for which the information is retrieved.  
Type: alphanumeric value set  
Range: PATHDRI
5. **ppgname** – Path protection group Name  
The parameter shall specify the path protection group name. Storage and retrieval of the ppgname shall be case sensitive, but actual use of the ppgname to determine the corresponding protection group is case insensitive.  
Option: If *aid* is specified, then *ppgname* can be omitted.  
If an input value is specified for *ppgname* and none is specified for *aid*, then RTRV-PROTN-GRP operates on all protection groups of type PATHDRI that have the specified path protection group name.  
If input values are specified for *aid* and *ppgname* then RTRV-PROTN-GRP operates on all protection groups of type PATHDRI that have the specified *aid*, *ppgname* pair.  
The command will complete successfully if there is no protection group described by *aid*, *ppgname*, but no data will be returned.  
Type: text string  
Range: 1 to 24 characters

**Output format** After receiving the RTRV-PROTN-GRP command, the following normal completion response is returned in case of EQPTSWFBR, EQPTCTL, EQPTEP155, 1+1, 2F, 4F protection groups :

```
sid date time
M ctag COMPLD
  "aid:[spec_block]"
  ...
  ...
  "aid:[spec_block]"
;
```

After receiving the RTRV-PROTN-GRP command, the following normal completion response is returned in case of PATHDRI protection group:

```
sid date time
M ctag COMPLD
  "aid:[spec_block]"
```

```
"outtribaid,CML:<CML block>"
.
.
"outtribaid,CML:<CML block>"
...
...
"aid:[spec_block]"
"outtribaid,CML:<CML block>"
.
.
"outtribaid,CML:<CML block>"
;
```

Both completion formats have a common generic format for the third and the following lines. This generic format is: "aid[, CML]:[spec\_block]" Nevertheless it was decided to specify them differently to express that – spec block may be either the spec block for the protection group parameters or the spec block for the CML parameters – aid may be either the protection group aid or the output tributary aid

If no protection group entity exists matching the specified values of the input parameters *aid*, *rid*, *ppgname* then the following response is returned:

```
sid date time
M ctag COMPLD
;
```

## Output parameters

### Command parameters (1+1 Equipment protection group)

#### 1. aid – Access Identifier

This parameter specifies the AID of the 1+1 protection equipment group.

Type: AID

Range: SwitchAndTmgProtGrpAID for switching protection group instance; CtlProtGroupAID for controller protection group instance; EP155ProtGroupAID for EP155 protection group instance

**Command parameters (multiplex section/line protection group)**

1. aid – Access Identifier  
This parameter specifies the aid of a 1+1 multiplex section/line protection group or the aid of a 1:1 multiplex section/line protection group (only R3.0 and later).  
Type: AID  
Range: OnePlusOne\_ProtGrpAID or NByOne\_ProtGrpAID

**Command parameters (2-fibre MS-SPRing/BLSR protection group)**

1. aid – Access Identifier  
This parameter specifies the AID of the 2 fibre MS-SPRing/BLSR protection group.  
Type: AID  
Range: TwoFibre\_ProtGrpAID  
Default: No default

**Command parameters (4-fibre MS-SPRing/BLSR protection group)**

1. aid – Access Identifier  
This parameter specifies the AID of the 4 fibre MS-SPRing/BLSR protection group.  
Type: AID  
Range: FourFibre\_ProtGrpAID

**Command parameters (Path protection group)**

1. aid – Access Identifier  
This parameter specifies the AID of the path protection group.  
Type: AID  
Range: Path\_ProtGrpAID
2. outtribaid – Output Tributary Access Identifier  
This parameter specifies the output tributary AID for a constituent signal within the protection group. One value is returned for each constituent signal together with the corresponding CML (Constituent Member List) block.  
Type: AID  
Range: GenTribAID

### **Spec block parameters (1+1 Equipment protection group)**

1. actunit – Active Unit State  
This parameter specifies which unit is currently selected within the protection group as active unit.  
The value WKG specifies that the worker unit is active.  
The value PROTN specifies that the protection unit is active.  
Type: alphanumeric value set  
Range: WKG, PROTN  
Default: For switching protection group instance: The first provisioned/auto-created circuit pack shall be the default active unit. For controller protection group instance: the active controller unit at the moment of creation of the CTL protection group. For EP155 protection group instance: The worker shall be the default active unit.
2. protn – Protection Unit  
The parameter specifies the protection circuit pack AID being a member of the 1+1 equipment protection group.  
Type: AID  
Default: For switching protection group instance: CpAID related to slot 10. For controller protection group instance: CpAID related to slot 31. For EP155 protection group instance: - If no cross-connections are assigned to one of the two EP155 cards, the user can choose it by the ENT-PROT-GRP command Default protection unit shall be the right card. - If cross-connections are assigned to one of the cards, the other card must become the protection unit. This means that the creation (ENT-PROTN-GRP) shall be rejected, if the user selects the card with cross-connections as protection card.
3. protnsiglvl – Protection Fault Status  
This parameter specifies the current fault status w.r.t. the protection unit as used by the protection state machine.  
The value EF (Equipment Failed) is used if an equipment defect used as switch criteria is currently present for the protection unit.  
The value NONE is used if no such defect is currently present.  
Type: alphanumeric value set  
Range: EF, NONE  
Default: NONE



4.    prototype – Protection Type  
      This parameter specifies the type of the protection group.  
      Type: alphanumeric value set  
      Range: EQPTSWFBR for switching protection group instance;  
      EQPTCTL for controller protection group instance; EQPTEP155  
      for EP155 protection group instance.
5.    swreq – Switch Request State  
      This parameter specifies the current switch request state of the  
      protection state machine.  
      The value EQPTFAILED (Equipment Failed) is used if an  
      equipment failed condition is the current state.  
      The value FS (Forced Switch) is used if a forced switch is the  
      current state.  
      The value MS (Manual Switch) is used if a manual switch is the  
      current state.  
      The value NR (No Request) is used if no request is the current  
      state.  
      Type: alphanumeric value set  
      Range: EQPTFAILED, FS, MS, NR for switch fabric protection  
      and EP155 protection; EQPTFAILED, MS, NR for controller  
      protection.  
      Default: NR
6.    wkg – Worker Unit  
      This parameter specifies the worker circuit pack AID being a  
      member of the 1+1 equipment protection group.  
      Type: AID  
      Range: CpAID  
      Default: For switching protection group instance: CpAID related  
      to slot 9. For controller protection group instance: CpAID related  
      to slot 11. For EP155 protection group instance: - If no  
      cross-connections are assigned to one of the two EP155 cards,  
      the user can choose it by the ENT-PROT-GRP command Default

worker unit shall be the left card. - If cross-connections are assigned to one of the cards, this card must become the worker unit. This means that the creation (ENT-PROTN-GRP) shall be rejected, if the user selects the card with no cross-connections as worker card.

7. wkgsiglvl – Worker Fault Status

This parameter specifies the current fault status w.r.t. worker unit as used by the protection state machine.

The value EF (Equipment Failed) is used if an equipment defect used as switch criteria is currently present for the worker unit.

The value NONE is used if no such defect is currently present.

Type: alphanumeric value set

Range: EF, NONE

Default: NONE; i.e. the default is the value 'NONE'

**Spec block parameters (multiplex section/line protection group)**

1. actunit – Active Unit State

This parameter specifies which port is currently selected within the protection group as active port.

The value WKG specifies that the worker port is active.

The value PROTN specifies that the protection port is active.

Type: alphanumeric value set

Range: WKG, PROTN

Default: WKG

2. actunitfe – Far-End Incoming Requested Selection

This parameter is derived from the incoming K1 [5..8] overhead byte.

The value WKG is used if accepted K byte value is equal to 0.

The value PROTN is used if the accepted K byte value is equal to 1.

The value UNAVAILABLE is used if an SF condition is active for the protection line.

The value NONE shall be used if there is no request from the far end for 1+1 optimized (only R3.0 and later)

The value INV (InValid) is used in all other cases.

Type: alphanumeric value set

Range: WKG, PROTN, UNAVAILABLE, NONE, INV

Default: WKG

3. actunitne – Near-End Outgoing Requested Selection  
This parameter is derived from the sent K1 [5..8] overhead byte.  
The value WKG is used if sent K byte value is equal to 0.  
The value PRTON is used if the sent K byte value is equal to 1.  
Type: alphanumeric value set  
Range: WKG, PROTN  
Default: WKG
4. aps – Far-End Incoming APS  
This parameter is derived from the incoming K1 [1..4] overhead byte.  
It indicates the type of request as follows:
  - DNR: Do Not Revert
  - EXER: Exercise
  - INV: Invalid (unused codes)
  - UNAVAILABLE: Not Available (SF condition pending for protection line)
  - FS: Forced Switch
  - LO: Lockout of Protection
  - MS: Manual Switch
  - NR: No Request
  - RR: Reverse Request
  - SF-H: Signal Fail High
  - SF-L: Signal Fail Low
  - SD-H: Signal Degrade High
  - SD-L: Signal Degrade Low
  - WTR: Wait to restore (for MSP 1+1, MSP 1:1) / Wait to rename (for MSP 1+1 Optimized).The APS code "WTR" has a different meaning depending on the protection type which shall be visible to the user. However, in the standards only "Wait to restore" is defined independent of the protection type.  
Type: alphanumeric value set.  
Range: DNR, EXER, INV, NA, FS, LO , MS, NR, RR, SF-H, SF-L, SD-L, SD-H, WTR  
Default: NR
5. apout – Near-End Outgoing APS  
This parameter is derived from the sent K1 [1..4] overhead byte.

It indicates the type of request as follows:

- DNR: Do Not Revert
- FS: Forced Switch
- LO: Lockout of Protection
- MS: Manual Switch
- NR: No Request
- RR: Reverse Request
- SF-H: Signal Fail High
- SF-L: Signal Fail Low
- SD-H: Signal Degrade High
- SD-L: Signal Degrade Low
- WTR: Wait to restore (only used if protection group is revertive).

Type: alphanumeric value set

Range: DNR, FS, LO , MS, NR, RR, SF-H, SF-L, SD-H, SF-L, WTR

Default: NR

6. apspn – MSP-APS ASAP Pointer

This parameter specifies the value for the ASAP (alarm severity assignment profile) name of type MSP-APS (Multiplex Section Protection – Automatic protection switching).

Type: alphanumeric string

Range: 1-24 characters including character '-'.

Default: DEFAULT

7. dcclmsprotmd – DCC Line/MS Protection Mode

The parameter shall specify, whether the line/MS dcc channel is switched as part of the line/MS protection group. The value ENABLE shall be used, if dcc channel is switched as part of line/MS protection group; otherwise the value DISABLED shall be used.

Type: alphanumeric value set 3;

Range: ENABLE, DISABLE

Default: DISABLE

8. dccsrprotmd – DCC Sect/RS Protection Mode  
The parameter shall specify, whether the section/RS dcc channel is switched as part of the line/MS protection group. The value ENABLE shall be used, if dcc channel is switched as part of line/MS protection group; otherwise the value DISABLED shall be used.  
Type: alphanumeric value set  
Range: ENABLE, DISABLE  
Default: DISABLE
9. pgrate – protection group Rate  
This parameter is derived from the interface rate of the ports within the protection group. It indicates the same value as for the two ports.  
Type: alphanumeric value set  
Range: OC3, OC12, OC48, OC192, OC768, STM1, STM4, STM16, STM64, STM256  
Default: The default value is the interface rate of the worker port.
10. protn – Protection Unit  
This parameter specifies the protection port AID being a member of the line protection/ MS protection group.  
Type: AID  
Range: SPortAID
11. protnsiglvl – Protection Fault Status  
This parameter specifies the current fault status w.r.t. port as used by the protection state machine.  
The value SF (Signal Fail) is used if a defect defined as signal fail condition is currently present for the protection port.  
The value SD (Signal Degrade) is used if a defect defined as signal degraded condition is currently present for the protection port.  
The value NONE is used if no such defect is currently present.  
Type: alphanumeric value set  
Range: SF, SD, NONE  
Default: NONE
12. protocol – APS Protocol  
This parameter specifies the protocol used by the protection state machine. The value 1+1\_UNI is used for 1+1 unidirectional switching. The value 1xN\_BIDIR is used for 1:1 bidirectional switching (N=1) (only R3.0 and later). The value 1+1\_OPTM is used for 1+1 optimized, bidirectional switching (only R3.0 and

later). The value 1+1\_BIDIR is used for 1+1 bidirectional switching (only R4.0 and later).

Type: alphanumeric value set

Range: 1+1\_UNI, 1xN\_BIDIR, 1+1\_OPTIt can also be used to convert a 2-side node to an asymmetric node and vice versa.

In mind the 'N' in 1xN\_BIDIR is considered to be always equal '1'. The value 1+1\_OPTM implicitly specifies bidirectional operation mode.

Default: 1+1\_UNI, in case of prototype = 1+1; 1xN\_BIDIR, in case of prototype = 1xNOPT (i.e. protection type 1:1).

13. prototype – Protection Type

This parameter specifies the type of the protection group. The value for the 1+1 line/MS protection group shall be 1+1. The value for the 1:1 line/MS protection group shall be 1xNOPT (only R3.0 and later).

In mind the 'N' in 1xNOPT is considered to be always equal '1'.

Type: value set

Range: 1+1 or 1xNOPT.

Default: 1+1

14. rme – Protection Reversion

The parameter specifies, whether revertive or non-revertive mode is used as operation mode of the protection group. The value ENABLE shall be used if the protection group operates in revertive mode. The value DISABLE shall be used if the protection group operates in non-revertive mode.

Type: alphanumeric value set

Range: DISABLE in case of prototype = 1+1; ENABLE in case of prototype = 1xNOPT.

Default: DISABLE, in case of prototype = 1+1; ENABLE, in case of prototype = 1xNOPT (i.e. protection type 1:1)

The **protocol** = OPTM can only be chosen in case of **prototype** = 1+1, thus default is DISABLE then.

15. ssi – Secondary Section Indication

The parameter shall indicate the 'Secondary Section' (line).

Type: AID

Range: WKG, PROTN; WKG denotes working section 1, PROTN denotes working section 2 according ITU-T G.841 Annex B.

Default: PROTN

16. swreq – Switch Request State

This parameter specifies the current switch request state of the protection state machine.

It shall have the following values:

- DNR: Do Not Revert
- FS: Forced Switch
- LO: Lockout of Protection
- MS: Manual Switch
- SF: Signal Fail
- SD: Signal Degrade
- WTR: Wait to restore (only used if protection group is revertive)
- FOP: Failure Of Protocol
- NR: No Request.

Type: alphanumeric value set

Range: DNR, FS, LO , MS, SF, SD, WTR, FOP, NR

Default: NR

17. wkg – Worker Unit

This parameter specifies the worker port AID being a member of the 1+1 line/MS protection group.

Type: AID

Range: SPortAID

18. wkgsiglvl – Worker Fault Status

This parameter specifies the current fault status w.r.t. port as used by the protection state machine.

The value SF (Signal Fail) is used if a defect defined as signal fail condition is currently present for the worker port.

The value SD (Signal Degrade) is used if a defect defined as

signal degraded condition is currently present for the worker port.  
The value NONE issued if no such defect is currently present.  
Type: alphanumeric value set.  
Range: SF, SD, NONE.  
Default: NONE.

19. wtr – Wait To Restore Time / Wait to Rename Time  
The parameter shall specify the 'wait to restore' time used by the protection state machine operating in revertive mode (MSP1+1, MSP1:1). In case of MSP 1+1 Optimized the same parameter shall be used for the 'wait to rename' time.  
Type: numeric string [minute]  
Range: 0 - 60  
Default: 5.

**Spec block parameters (2-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
If this parameter is enabled, the automatic ring discovery algorithm will assign nodeID values to each node in the ring and construct the necessary ring map information. All nodes in the ring must be Lucent. If disabled, the user will assign the NodeID value manually with ED-MAP-RING and supply the ring map information to each node on the ring for the BLSR protocol to operate. It is necessary to activate this user-provisioned information with SET-MAP-RING. Until all nodes on the ring have the same ring map, nodes will have most likely an outstanding NodeID mismatch alarm active.  
Type: alphanumeric string.  
Range: ENABLE, DISABLE.  
Default: ENABLE.
2. blsrpn – MSSPRING-BLSR ASAP Pointer  
This parameter specifies the value for the ASAP (alarm severity assignment profile) name of type MSSPRING-BLSR.  
Type: alphanumeric string  
Range: 1-24 characters including character '-'.  
Default: DEFAULT
3. eapschst – Incoming East APS Channel Status  
This parameter is derived from the incoming K2 [6..8] overhead byte of the east port.



It indicates the status as follows:

- IDLE: Idle
- BRIDGED: Bridged
- BANDS: Bridged & Switched
- XTRFC: Extra Traffic on protection channels
- NOTUSED: Not Used – Reserved for future use
- RDIL: RDI-L/MS-RDI (Remote Defect Indication -Line/Multiplex Section)
- AISL: AIS-L/MS-AIS (Alarm Indication Signal – Line/Multiplex Section)

Type: alphanumeric value set

Range: IDLE, BRIDGED, BANDS, XTRFC, NOTUSED, RDIL, AISL

Default: IDLE

4. eapsgnid – Incoming East APS Destination Node Id  
This parameter is derived from the incoming K1 [5..8] overhead byte of the east port. It specifies the node ID for which the K1 byte is destined.  
The value UNAVAILABLE is used in case of an pending SF condition.  
Type: alphanumeric value set  
Range: 0-15 or UNAVAILABLE  
Default: 0
5. eapsgprotn – Incoming East APS Protection Path  
This parameter is derived from the incoming K2 overhead byte of the east port.  
It indicates the protection path as follows:
  - 0: short path code (S)
  - 1: long path code (L)The value UNAVAILABLE is used in case of an pending SF condition.  
Type: alphanumeric value set  
Range: 0, 1, UNAVAILABLE  
Default: 0

6. eapssnid – Incoming East APS Source Node Id  
This parameter is derived from the incoming K2 [1..4] overhead byte of the east port. It specifies the node ID which sourced the K1 byte.  
The value UNAVAILABLE is used in case of an pending SF condition.  
Range: 0-15 or UNAVAILABLE  
Default: 0
7. eapssw – Incoming East APS Switch Priority  
This parameter is derived from the incoming K1 [1..4] overhead byte of the east port.  
It indicates the switch priority/bridge request code as follows:
  - LPS: Lockout of Protection Span
  - FSS: Forced Switch Span (4F only)
  - FSR: Forced Switch Ring
  - SFS: Signal Fail Span (4F only)
  - SFR: Signal Fail Ring
  - SDP: Signal Degrade Protection (4F only)
  - SDS: Signal Degrade Span (4F only)
  - SDR: Signal Degrade Ring
  - MSS: Manual Switch Span (4F only)
  - MSR: Manual Switch Ring
  - WTR: Wait to Restore
  - EXERS: Exerciser Span (4F only)
  - EXERR: Exerciser Ring
  - RRS: Reverse Request Span
  - RRR: Reverse Request Ring
  - NR: No Request.The value UNAVAILABLE is used in case of an pending SF condition.  
Range: LPS, FSS, FSR, SFS, SFR, SDP, SDS, SDR, MSS, MSR, WTR, EXERS, EXERR, RRS, RRR, NR, UNAVAILABLE.  
Default: NR.

8. east – East Port  
This parameter specifies the port being a member in the role of the east port for a 2-fibre MS-SPRing/BLSR protection group.  
Type: AID  
Range: SPortAID
9. elprotnsw – East Last protection switch Attempt  
This parameter specifies, whether the last switch request for the east side succeeded or not.  
The values have the following semantics:
  - SUCCESS: last request did succeed
  - DENY: last request was denied due a validation rule
  - FAILURE: last request could not be completed because far end node did not response with proper K-byte.Type: alphanumeric value set.  
Range: SUCCESS, DENY, FAILURE  
Default: SUCCESS.
10. eswreq – East Switch Request State  
This parameter specifies the active switch request state of the protection state machine for the east side. If the east side is an associated side of a switching node, the value will be derived from the request currently associated with the concerned side, and accepted in the protocol as highest or coexisting priority. For all other cases, the value shall be 'NR'.  
It has the following values:
  - LPS: Lockout of Protection Span
  - FSR: Forced Switch of Service to Protection – Ring
  - SFR: Signal Fail – Ring
  - SDR: Signal Degrade – Ring
  - MSR: Manual Switch of Service to Protection – Ring
  - WTR: Wait to Restore
  - NR: No Request.Type: alphanumeric value set.  
Range LPS, FSR, SFR, SDR, MSR, WTR, NR.  
Default: NR.

11. pgrate – protection group Rate  
This parameter is derived from the interface rate of the ports within the protection group. It indicates the same value as for the two ports.  
Type: alphanumeric value set.  
Range: OC48, OC192, OC768, STM16, STM64, STM256  
Default: The default value shall be the interface rate of the east port.
12. prototype – Protection Type  
This parameter specifies the type of the protection group. The value for the 2-fibre MS-SPRing/BLSR protection group is 2F.  
Type: alphanumeric value set.  
Range: 2F.
13. rid – Ring Identification  
This parameter specifies the ring identification name. Storage and retrieval of the *rid* is case sensitive, but actual use of the rid to determine the corresponding protection group is case insensitive. The parameter is used as an alias to identify exactly one MS-SPRing/BLSR protection group of any type. Therefore the value shall be unique for all protection groups of type 2F or 4F within the NE.  
Type: text string of chars allowed for TID strings.  
Range: 1 to 15 characters.  
Default: NONE.
14. ringndst – Ring Node APS State  
This parameter specifies the ring node APS state.  
It shall have the following values under normal conditions:  
IDLE, SWITCHING, PASSTHROUGH  
It shall have in addition the following values if protection state machine is suspended: SUSPENDED-IDLE, SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH  
Type: alphanumeric value set.  
Range: IDLE, SWITCHING, PASSTHROUGH, SUSPENDED-IDLE, SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH.  
Default: SUSPENDED-IDLE.
15. wapschst – Incoming West APS Channel Status  
This parameter is derived from the incoming K2 [6..8] overhead byte of the west port.

It indicates the status as follows:

- IDLE: Idle BRIDGED Bridged
- BANDS: Bridged & Switched
- XTRFC: Extra Traffic on protection channels
- NOTUSED: Not Used – Reserved for future use
- RDIL: RDI-L/MS-RDI (Remote Defect Indication – Line/Multiplex Section).
- AISL: AIS-L/MS-AIS (Alarm Indication Signal – Line/Multiplex Section).

Type: alphanumeric value set.

Range: IDLE, BRIDGED, BANDS, XTRFC, NOTUSED, RDIL, AISL.

Default: IDLE.

16. wapsdnid – Incoming West APS Destination Node Id

This parameter is derived from the incoming K1 [5..8] overhead byte of the west port. It specifies the node ID for which the K1 byte is destined. The value UNAVAILABLE is used in case of an pending SF condition.

Type: alphanumeric string.

Range: 0-15 or UNAVAILABLE.

Default: 0.

17. wapsprotn – Incoming West APS Protection Path

This parameter is derived from the incoming K2 overhead byte of the west port.

It indicates the protection path as follows:

- 0: short path code (S)
- 1: long path code (L)

The value UNAVAILABLE is used in case of an pending SF condition.

Type: alphanumeric value set.

Range: 0, 1, UNAVAILABLE.

Default: 0.

18. wapssnid – Incoming West APS Source Node Id  
This parameter is derived from the incoming K2 [1..4] overhead byte of the west port. It specifies the node ID which sourced the K1 byte. The value UNAVAILABLE is used in case of an pending SF condition.  
Type: alphanumeric string.  
Range: 0-15 or UNAVAILABLE.  
Default: 0.
19. wapssw – Incoming West APS Switch Priority  
This parameter is derived from the incoming K1 [1..4] overhead byte of the west port.  
It indicates the switch priority/bridge request code as follows:
- LPS: Lockout of Protection Span
  - FSS: Forced Switch Span (4F only)
  - FSR: Forced Switch Ring
  - SFS: Signal Fail Span (4F only)
  - SFR: Signal Fail Ring
  - SDP: Signal Degrade Protection (4F only)
  - SDS: Signal Degrade Span (4F only)
  - SDR: Signal Degrade Ring
  - MSS: Manual Switch Span (4F only)
  - MSR: Manual Switch Ring
  - WTR: Wait to Restore
  - EXERS: Exerciser Span (4F only)
  - EXERR: Exerciser Ring
  - RRS: Reverse Request Span
  - RRR: Reverse Request Ring
  - NR: No Request.
- The value UNAVAILABLE is used in case of an pending SF condition.  
Type: alphanumeric value set.  
Range: LPS, FSS, FSR, SFS, SFR, SDP, SDS, SDR, MSS, MSR, WTR, EXERS, EXERR, RRS, RRR, NR, UNAVAILABLE.  
Default: NR.

20. west – West Port

This parameter specifies the port being a member in the role of the west port for a 2-fibre MS-SPRing/BLSR protection group.

Type: AID.

Range: SPortAID.

Default: None.

21. wlprotnsw – West Last protection switch Attempt

This parameter specifies, whether the last switch request for the west side succeeded or not.

The values have the following semantics:

- SUCCESS: last request did succeed
- DENY: last request was denied due a validation rule
- FAILURE: last request could not be completed because far end node did not response with proper K-byte.

Type: alphanumeric value set.

Range: SUCCESS, DENY, FAILURE

Default: SUCCESS.

22. wswreq – West Switch Request State

This parameter specifies the active switch request state of the protection state machine for the east side. If the east side is an associated side of a switching node, the value is derived from the request currently associated with the concerned side, and accepted in the protocol as highest or coexisting priority. For all other cases, the value shall be 'NR'.

It have the following values:

- LPS: Lockout of Protection Span
- FSR: Forced Switch of Service to Protection – Ring
- SFR: Signal Fail – Ring
- SDR: Signal Degrade – Ring
- MSR: Manual Switch of Service to Protection – Ring

- WTR: Wait to Restore
  - NR: No Request.
- Type: alphanumeric value set.  
Range LPS, FSR, SFR, SDR, MSR, WTR, NR.  
Default: NR.

23. wtr – Wait To Restore Time

This parameter specifies the wait to restore time for ring switches used by the protection state machine operating in revertive mode. The protection operates in revertive mode if the wait-to-restore time is in the range 0-12. The protection operates in non-revertive mode if the wait-to-restore time has the value 99 representing the infinite value.

Note: If *wtr* time is set to infinite, the switch request state shall be WTR until a higher request occurs.

Type: numeric string [minute].  
Range: 0 – 12 in 1 minute increments and 99.  
Default: 5.

**Spec block parameters (4-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery

If this parameter is enabled, the automatic ring discovery algorithm will assign nodeID values to each node in the ring and construct the necessary ring map information. All nodes in the ring must be Lucent. If disabled, the user will assign the NodeID value and supply the ring map information to each node on the ring for the BLSR protocol to operate. Until all nodes on the ring have the same ring map, nodes will have most likely an outstanding NodeID mismatch alarm active.

Type: alphanumeric string.  
Range: ENABLE, DISABLE.  
Default: ENABLE.

2. blsrpn – MSSPRING-BLSR ASAP Pointer

This parameter specifies the value for the ASAP (alarm severity assignment profile) name of type MSSPRING-BLSR.

Type: alphanumeric string.  
Range: 1-24 characters including character '-'.  
Default: DEFAULT.



3. **eactunit** - East Active Unit State

The parameter shall specify whether the traffic associated with the east worker port is physically running over the east worker port (i.e. value WKG is used in that case) or over a protection port (i.e. value PROTN is used in that case). The protection port can be the east protection port in case of span switch or the west protection port in case of a loopback switch. The value of the parameter is derived from the internal handled active line state of the service port and the active line state of the protection ports.

**eactunit** = WKG: active line state of east worker port is active.

**eactunit** = PROTN: active line state of east worker port is standby.

Type: alphanumeric value set.

Range: WKG, PROTN.

Default: WKG.

4. **eapschst** – Incoming East APS Channel Status

This parameter is derived from the incoming K2 [6..8] overhead byte of the east port.

It indicates the status as follows:

- IDLE: Idle
- BRIDGED: Bridged
- BANDS: Bridged & Switched
- XTRFC: Extra Traffic on protection channels
- NOTUSED: Not Used – Reserved for future use
- RDIL: RDI-L/MS-RDI (Remote Defect Indication -Line/MultiplexSection)
- AISL: AIS-L/MS-AIS (Alarm Indication Signal – Line/Multiplex Section)
- in case of **protnmode** = TOPEX (only R3.0 and R3.1): ACT command to ACT to complete the Switch.

Type: alphanumeric value set.

Range: IDLE, BRIDGED, BANDS, XTRFC, NOTUSED, ACT, RDIL, AISL.

Default: IDLE.

5. eapstdnid – Incoming East APS Destination Node Id  
This parameter is derived from the incoming K1 [5..8] overhead byte of the east port. It specifies the node ID for which the K1 byte is destined.  
The value UNAVAILABLE is used in case of an pending SF condition.  
Type: alphanumeric string.  
Range: 0-15 or UNAVAILABLE.  
Default: 0.
6. eapsprotn – Incoming East APS Protection Path  
This parameter is derived from the incoming K2 overhead byte of the east port.  
It indicates the protection path as follows:
  - 0: short path code (S)
  - 1: long path code (L)The value UNAVAILABLE is used in case of an pending SF condition.  
Type: alphanumeric value set.  
Range: 0, 1, UNAVAILABLE.  
Default: 0.
7. eapssnid – Incoming East APS Source Node Id  
This parameter is derived from the incoming K2 [1..4] overhead byte of the east port. It specifies the node ID which sourced the K1 byte.  
The value UNAVAILABLE is used in case of an pending SF condition.  
Type: alphanumeric string.  
Range: 0-15 or UNAVAILABLE.  
Default: 0.
8. eapssw – Incoming East APS Switch Priority  
This parameter is derived from the incoming K1 [1..4] overhead byte of the east port.  
It indicates the switch priority/bridge request code as follows:
  - LPS: Lockout of Protection Span
  - FSS: Forced Switch Span (4F only)
  - FSR: Forced Switch Ring
  - SFS: Signal Fail Span (4F only)
  - SFR: Signal Fail Ring

- SDP: Signal Degrade Protection (4F only)
- SDS: Signal Degrade Span (4F only)
- SDR: Signal Degrade Ring
- MSS: Manual Switch Span (4F only)
- MSR: Manual Switch Ring
- WTR: Wait to Restore
- EXERS: Exerciser Span (4F only)
- EXERR: Exerciser Ring
- RRS: Reverse Request Span
- RRR: Reverse Request Ring
- NR: No Request.

The value UNAVAILABLE is used in case of an pending SF condition.

The bridge request LPS and SFP (Signal Fail Protection) share a common code value. Therefore they cannot be distinguished. The value 'LPS' will be used in that context.

Type: alphanumeric value set.

Range: LPS, FSS, FSR, SFS, SFR, SDP, SDS, SDR, MSS, MSR, WTR, EXERS, EXERR, RRS, RRR, NR, UNAVAILABLE.

Default: NR.

9. eastprotn - East Protection Port

This parameter shall specifies the port being a member in the role of the east protection port for a 4-fibre MS-SPRing/BLSR protection group.

Type: AID

Range: SPortAID

10. eastwkg - East Worker Port

This parameter specifies the port being a member in the role of the east worker port for a 4-fibre MS-SPRing/BLSR protection group.

Type: In case of an asymmetric ring: alphanumeric string; in all other cases: AID.

Range: In case of an asymmetric ring: ASYMMETRIC; in all other cases: SPortAID.

11. elprotnsw – East Last protection switch Attempt

This parameter specifies, whether the last switch request for the east side succeeded or not.

The values have the following semantics:

- SUCCESS: last request did succeed
- DENY: last request was denied due a validation rule
- FAILURE: last request could not be completed because far end node did not response with proper K-byte.

Type: alphanumeric value set.

Range: SUCCESS, DENY, FAILURE.

Default: SUCCESS.

## 12. eswreq - East Switch Request State

This parameter specifies the active switch request state of the protection state machine for the east side. If the east side is an associated side of a switching node, the value shall be derived from the request currently associated with the concerned side, and accepted in the protocol as highest or coexisting priority. For all other cases, the value shall be 'NR'.

It has the following values:

- LPS: Lockout of Protection Span
- FSS: Forced Switch of Service to Protection - Span
- FSR: Forced Switch of Service to Protection - Ring
- SFS: Signal Fail - Span
- SFR: Signal Fail - Ring
- SDS: Signal Degrade - Span
- SDR: Signal Degrade - Ring
- SDP : Signal Degrade - Protection
- MSS: Manual Switch of Service to Protection - Span
- MSR: Manual Switch of Service to Protection - Ring
- WTR: Wait to Restore
- NR: No Request.

Type: alphanumeric value set.

Range: LPS, FSS, FSR, SFS, SFR, SDS, SDR, SDP, MSS, MSR, WTR, NR The bridge request LPS and SFP (Signal Fail Protection) share a common code value. Therefore they cannot be distinguished. The value 'LPS' will be used in that context.

Default: NR.

13. pgrate – protection group rate  
This parameter is derived from the interface rate of the ports within the protection group. It indicates the same value as for the four ports.  
Type: alphanumeric value set.  
Range: OC192, STM64.  
Default: The default value shall be the interface rate of the east port.
14. protmode - Protection Switch Mode  
The parameter specifies the protection switch mode. The value LOOPBACK shall be used for the classical ring application. The value SHORTENED shall be used for transmission delay sensitive applications. The value TOPEX (only R3.0 and ^R3.1) shall be used for the so called transoceanic application, which allows extra traffic, improves restorability and improves delay as well as in SHORTENED mode.  
In case of a ring switch ... LOOPBACK performs the bridge and switch function in that nodes which are most close to the failed span. SHORTENED performs the bridge function at the add node respectively the switch function at the drop node of each ring circuit. It is an application only similar to the transoceanic protocol. TOPEX allows, compared to SHORTENED mode, additionally the traffic restoration of not affected spans. It is the transoceanic protocol application.  
Type: alphanumeric value set.  
Range: LOOPBACK, SHORTENED.  
Default: LOOPBACK.
15. prototype – Protection Type  
This parameter specifies the type of the protection group. The value for the 4-fibre MS-SPRing/BLSR protection group is 4F.  
Type: alphanumeric value set.  
Range: 4F.
16. rid – Ring Identification  
This parameter specifies the ring identification name. Storage and retrieval of the *rid* is case sensitive, but actual use of the rid to determine the corresponding protection group is case insensitive. The parameter is used as an alias to identify exactly one MS-SPRing/BLSR protection group of any type. Therefore the

value shall be unique for all protection groups of type 2F or 4F within the NE.

Type: text string of chars allowed for TID strings.

Range: 1 to 15 characters.

Default: NONE

17. ringndst – Ring Node APS State

This parameter specifies the ring node APS state.

It shall have the following values under normal conditions:

IDLE, SWITCHING, PASSTHROUGH

It shall have in addition the following values if protection state machine is suspended: SUSPENDED-IDLE, SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH.

Type: alphanumeric value set.

Range: IDLE, SWITCHING, PASSTHROUGH, SUSPENDED-IDLE, SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH.

Default: SUSPENDED-IDLE.

18. swtr - Span Wait To Restore Time

The parameter specifies the wait to restore time for span switches used by the protection state machine operating in revertive mode.

The protection shall operate in revertive mode if the wait-to-restore time is in the range 0-12. The protection shall operate in non-revertive mode if the wait-to-restore time has the value 99 representing the infinite value.

Note: If *wtr* time is set to infinite, the switch request state shall be WTR until a higher request occurs.

Type: numeric string [minute].

Range: 0 - 12 in 1 minute increments and 99.

Default: 5.

19. wactunit - West Active Unit State

The parameter specifies whether the traffic associated with the west worker port is physically running over the west worker port (i.e. value WKG is used in that case) or over a protection port (i.e. value PROTN is used in that case). The protection port can be the west protection port in case of span switch or the east protection port in case of a loopback switch. The value of the parameter is derived from the internal handled active line state of the service port and the active line state of the protection ports.  
wactunit = WKG: active line state of west worker port is active

wactunit = PROTN: active line state of west worker port is standby.

Type: alphanumeric value set.

Range: WKG, PROTN.

Default: WKG.

20. wapschst – Incoming West APS Channel Status

This parameter is derived from the incoming K2 [6..8] overhead byte of the west port.

It indicates the status as follows:

- IDLE: Idle
- BRIDGED: Bridged
- BANDS: Bridged & Switched
- XTRFC: Extra Traffic on protection channels
- NOTUSED: Not Used – Reserved for future use
- RDIL: RDI-L/MS-RDI (Remote Defect Indication – Line/Multiplex Section)
- AISL: AIS-L/MS-AIS (Alarm Indication Signal – Line/Multiplex Section)
- in case of *protnmode* = TOPEX (only R3.0 and R3.1): ACT command to ACT to complete the Switch.

Type: alphanumeric value set.

Range: IDLE, BRIDGED, BANDS, XTRFC, NOTUSED, ACT, RDIL, AISL.

Default: IDLE.

21. wapsdnid – Incoming West APS Destination Node Id

This parameter is derived from the incoming K1 [5..8] overhead byte of the west port. It specifies the node ID for which the K1 byte is destined. The value UNAVAILABLE is used in case of an pending SF condition.

Type: alphanumeric string.

Range: 0-15 or UNAVAILABLE.

Default: 0.

22. wapsprotn – Incoming West APS Protection Path

This parameter is derived from the incoming K2 overhead byte of the west port.

It indicates the protection path as follows:

- 0: short path code (S)
- 1: long path code (L)

The value UNAVAILABLE is used in case of an pending SF condition.

Type: alphanumeric value set.

Range: 0, 1, UNAVAILABLE.

Default: 0.

23. wapssnid – Incoming West APS Source Node Id

This parameter is derived from the incoming K2 [1..4] overhead byte of the west port. It specifies the node ID which sourced the K1 byte. The value UNAVAILABLE is used in case of an pending SF condition.

Type: alphanumeric string.

Range: 0-15 or UNAVAILABLE.

Default: 0.

24. wapssw – Incoming West APS Switch Priority

This parameter is derived from the incoming K1 [1..4] overhead byte of the west port.

It indicates the switch priority/bridge request code as follows:

- LPS: Lockout of Protection Span
- FSS: Forced Switch Span
- FSR: Forced Switch Ring
- SFS: Signal Fail Span
- SFR: Signal Fail Ring
- SDP: Signal Degrade Protection
- SDS: Signal Degrade Span
- SDR: Signal Degrade Ring
- MSS: Manual Switch Span
- MSR: Manual Switch Ring
- WTR: Wait to Restore
- EXERS: Exerciser Span
- EXERR: Exerciser Ring
- RRS: Reverse Request Span



- RRR: Reverse Request Ring
- NR: No Request

The value UNAVAILABLE is used in case of an pending SF condition.

The bridge request LPS and SFP (Signal Fail Protection) share a common code value. Therefore they cannot be distinguished. The value 'LPS' will be used in that context.

Type: alphanumeric value set.

Range: LPS, FSS, FSR, SFS, SFR, SDP, SDS, SDR, MSS, MSR, WTR, EXERS, EXERR, RRS, RRR, NR, UNAVAILABLE.

Default: NR.

25. westprotn - West Protection Port

This parameter specifies the port being a member in the role of the west protection port for a 4-fibre MS-SPRing/BLSR protection group.

Type: AID

Range: SPortAID

26. westwkg - West Worker Port

This parameter specifies the port being a member in the role of the west worker port for a 4-fibre MS-SPRing/BLSR protection group

Type: In case of an asymmetric ring: alphanumeric string; in all other cases: AID

Range: In case of an asymmetric ring: ASYMMETRIC; in all other cases: SPortAID.

27. wlprotnsw – West Last protection switch Attempt

This parameter specifies, whether the last switch request for the west side succeeded or not.

The values have the following semantics:

- SUCCESS: last request did succeed
- DENY: last request was denied due a validation rule
- FAILURE: last request could not be completed because far end node did not response with proper K-byte

Type: alphanumeric value set.

Range: SUCCESS, DENY, FAILURE.

Default: SUCCESS.

28. wswreq – West Switch Request State

This parameter specifies the active switch request state of the protection state machine for the east side. If the east side is an associated side of a switching node, the value is derived from the request currently associated with the concerned side, and accepted in the protocol as highest or coexisting priority. For all other cases, the value shall be 'NR'.

It have the following values:

- LPS: Lockout of Protection Span
- FSS: Forced Switch of Service to Protection - Span
- FSR: Forced Switch of Service to Protection – Ring
- SFS: Signal Fail – Span
- SFR: Signal Fail – Ring
- SDS: Signal Degrade – Span
- SDR: Signal Degrade – Ring
- SDP: Signal Degrade - Protection
- MSS: Manual Switch of Service to Protection - Span
- MSR: Manual Switch of Service to Protection – Ring
- WTR: Wait to Restore
- NR: No Request.

Type: alphanumeric value set.

Range LPS, FSS, FSR, SFS, SFR, SDS, SDR, SDP, MSS, MSR, WTR, NR The bridge request LPS and SFP (Signal Fail Protection) share a common code value. Therefore they cannot be distinguished. The value 'LPS' will be used in that context.

Default: NR.

29. wtr – Wait To Restore Time

This parameter specifies the wait to restore time for ring switches used by the protection state machine operating in revertive mode. The protection operates in revertive mode if the wait-to-restore time is in the range 0-12. The protection operates in non-revertive mode if the wait-to-restore time has the value 99 representing the infinite value.

Note: If wtr time is set to infinite, the switch request state shall be WTR until a higher request occurs.

Type: numeric string [minute].

Range: 0 – 12 in 1 minute increments and 99.

Default: 5.

### Spec block parameters (path protection group)

1. dripathpn – SNCP-UPSR ASAP Pointer  
This parameter specifies the value for the ASAP (alarm severity assignment profile) name of type SNCP-UPSR.  
Type: alphanumeric string.  
Range: 1-24 characters including character '-'.  
Default: DEFAULT.
2. htmr – Hold-Off Time  
This parameter specifies the hold-off time for automatic protection switching used by the protection state machine.  
Type: numeric string [ms].  
Range: 0 .. 99 msec in 1 msec steps and 100 .. 10000 msec in 100 msec steps.
3. ppgname – Path protection group Name  
This parameter specifies the path protection group name. Storage and retrieval of the *ppgname* is case sensitive, but actual use of the *ppgname* to determine the corresponding protection group is case insensitive.  
Type: text string.  
Range: 0 to 24 characters.  
Default: empty string
4. protn – Protection Tributary  
This parameter specifies the protection input tributary AID being a member of the path protection group.  
Type: AID.  
Range: STS1NumAID.
5. prototype – Protection Type  
This parameter specifies the type of the protection group. The value for the path protection group is PATHDRI.  
Type: alphanumeric value set.  
Range: PATHDRI.  
Default: PATHDRI.

6.   rme – Protection Reversion  
      This parameter specifies, whether revertive or non-revertive mode is used as operation mode of the protection group.  
      The value ENABLE is used if the protection operates in revertive mode.  
      The value DISABLE is used if the protection operates in non-revertive mode.  
      Type: alphanumeric value set.  
      Range: ENABLE, DISABLE.
7.   snctype – SNC Protection Type  
      This parameter specifies the type of the path protection w.r.t. switch criteria used by the protection state machine.  
      The value SNCI (Inherent) is used if server signal fail is used as switch criteria.  
      The value SNCN (Non-Intrusive) is used if server signal fail and defects supervised by a non-intrusive path monitor are used as switch criteria  
      The value NA is used if one of the tributary inputs is related to a port operating in SONET mode.  
      Type: alphanumeric value set.  
      Range: SNCI, SNCN, NA.
8.   wkg – Worker Tributary  
      This parameter specifies the worker input tributary AID being a member of the path protection group.  
      Type: AID.  
      Range: STS1NumAID.
9.   wtr – Wait To Restore Time  
      This parameter specifies the wait to restore time used by the protection state machine operating in revertive mode.  
      Type: numeric string [minute].  
      Range: 0 – 60.

### **CML Block parameters (path protection group)**

The CML (Constituent Member List) block is only used in the context of the path protection group. One block will be returned for each constituent signal within the protection group.

1.   actunit – Active Unit State  
      This parameter specifies which input tributary is currently selected within the protection group as active input.  
      The value WKG specifies that the worker tributary is active.  
      The value PROTN specifies that the protection tributary is active.  
      Type: alphanumeric value set.  
      Range: WKG, PROTN.  
      Default: WKG.
2.   actunitaid – Active Unit State AID  
      This parameter specifies the input tributary AID of the constituent signal which is currently selected within the protection group as active input for the dedicated constituent tributary output (see parameter outtribaid).  
      Type: AID.  
      Range: STS1NumAID.  
      Default: AID of the worker tributary.
3.   cst – Constituent Signal Type  
      This parameter specifies the rate of the constituent signal within the path protection group.  
      Type: alphanumeric value set.  
      Range: STS1, STS3C, STS12C, STS48C, STS192C, VC3, VC4, VC44C, VC416C, VC464C.  
      Default: The default value is derived from the tributary input signal rate list in case of fixed mode.
4.   protnsiglvl – Protection Fault Status  
      This parameter specifies the current fault status w.r.t. tributary as used by the protection state machine.  
      The value SF (Signal Fail) is used if a defect defined as signal fail condition is currently present for the protection tributary.  
      The value SD (Signal Degrade) is used if a defect defined as signal degrade condition is currently present for the protection tributary.  
      The value NONE is used if no such defect is currently present.  
      Type: alphanumeric value set.  
      Range: SF, SD, NONE.  
      Default: NONE.

5. swreq – Switch Request State  
This parameter specifies the current switch request state of the protection state machines.  
It have the following values:
  - LO: Lockout of Protection
  - FS: Forced Switch
  - MS: Manual Switch
  - SF: Signal Fail
  - SD: Signal Degrade
  - WTR: Wait to restore (only used if protection group is revertive)
  - NR: No Request.Type: alphanumeric value set.  
Range: LO ,FS, MS, SF, SD , WTR, NR.  
Default: NR.
6. wkgsiglvl – Worker Fault Status  
This parameter specifies the current fault status w.r.t. tributary as used by the protection state machine.  
The value SF (Signal Fail) is used if a defect defined as signal fail condition is currently present for the worker tributary.  
The value SD (Signal Degrade) is used if a defect defined as signal degrade condition is currently present for the worker tributary.  
The value NONE is used if no such defect is currently present.  
Type: alphanumeric value set.  
Range: SF, SD, NONE.  
Default: NONE.

## Example input/output

### 1+1 Equipment Protection Group

The following example retrieves 1+1 equipment protection group information:

```
RTRV-PROTN-GRP:LT-UNITE:1-1-estgrp:123456::EQPTSWFBR;  
LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-estgrp:protype=EQPTSWFBR,wkg=1-1-#-#-xcw-  
cp,protn=1-1-#-#-xcp-cp,actunit=  
WKG,protnsiglvl=NONE,wkgsiglvl=NONE,swreq=NR"
```

;

### Multiplex section/line protection group (1+1)

The following example retrieves 1+1 multiplex section/line protection group information:

```
RTRV-PROTN-GRP:LT-UNITE:1-1-o001:123456::1+1;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-o01:protype=1+1,wkg=1-1-#-#-13-1,  
    protn=1-1-#-#-14-1,wtr=5,apspn=DEFAULT,  
    dcclmsprotmd=DISABLE,dccsrprotmd=DISABLE,  
    protocol=1+1_UNI,rme= DISABLE,swreq=NR,  
    actunit=WKG,actunitfe=WKG,actunitne=WKG,aps=NR,  
    apsout=NR,pgrate=OC192,wkgsiglvl=NONE,protnsiglvl=NONE"  
;
```

The following example retrieves 1+1 optimized multiplex section/line protection group information:

```
RTRV-PROTN-GRP:LT-UNITE:1-1-o001:123456::1+1;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-o001:protype=1+1,wkg=1-1-#-#-13-1,protn=  
    1-1-#-#-14-1,wtr=5,apspn=DEFAULT,  
    dcclmsprotmd=DISABLE,dccsrprotmd=DISABLE,  
    protocol=OPTM,rme=DISABLE,swreq=NR,ssi=WKG,  
    actunit=WKG,actunitfe=NONE, actunitne=WKG,aps=NR,  
    apsout=NR,pgrate=STM64,wkgsiglvl=NONE,  
    protnsiglvl=NONE"  
;
```

### Multiplex Section/Line protection group (1:1)

The following example retrieves 1:1 multiplex section/line protection group information:

```
RTRV-PROTN-GRP:LT-UNITE:1-1-n001:123456::1x1;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-n001:protype=1xNOPT,wkg=1-1-#-#-13-1,  
    protn=1-1-#-#-14-1,wtr=5,apspn=DEFAULT,  
    dcclmsprotmd=DISABLE,dccsrprotmd=DISABLE,  
    protocol=BIDIR,rme= ENABLE,swreq=NR,actunit=WKG,
```

```
actunitfe=WKG,actunitne=WKG,aps=NR,apsout=NR,  
pgrate=STM64,wkgsiglvl=NONE,protnsiglvl=NONE"  
;
```

## 2 fibre MS-SPRing/BLSR protection group

The following example retrieves 2F MS-SPRing/BLSR protection group information:

```
RTRV-PROTN-GRP:LT-UNITE:1-1-t001:123456::2F;  
LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-t001:prototype=2F,east=1-1-#-#-13-1,  
west=1-1-#-#-14-1,rid="denver",wtr=5,  
blsrpn=DEFAULT,eswreq=NR,wsreq=NR,pgrate=0C192,  
eapschst=IDLE,eapsdnid=0, eapsprotn=0,eapssnid=0,  
eapssw=NR,elprotnsw=SUCCESS,ringndst=IDLE,  
wapschst=IDLE, wapsdnid=0,wapsprotn=0,wapssnid=0,  
wapssw=NR,wlprotnsw=SUCCESS"
```

## 4 fibre MS-SPRing/BLSR protection group

The following example retrieves 4F MS-SPRing/BLSR protection group information:

```
RTRV-PROTN-GRP:LT-UNITE:1-1-f001:123456::4F;  
LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-f001:prototype=4F,eastwkg=1-1-#-#-13-1,  
eastprotn=1-1-#-#-15-1,westwkg=1-1-#-#-14-1,  
westwkg=1-1-#-#-16-1,rid="denver",  
protnmode=LOOPBACK,swtr=5,wtr=5, blsrpn=DEFAULT,  
eswreq=NR,eactunit=WKG,wsreq=NR,wactunit=WKG,  
pgrate=0C192,eapschst=IDLE,eapsdnid=0,eapsprotn=0,  
eapssnid=0,eapssw=NR,elprotnsw=SUCCESS,  
ringndst=IDLE,wapschst=IDLE, wapsdnid=0,wapsprotn=0,  
wapssnid=0,wapssw=NR,wlprotnsw=SUCCESS"  
;
```

## Path protection group

Constituent Member List – Path protection group Examples: To help understand a PATHDRI examples that will be given below, it will be helpful to summarize some facts pertaining to DRIs. The first output line for a PATHDRI gives information about the DRI as a entity.



The following output line gives information about the constituent members. Even for a fixed rate path DRI, there will be two output lines. The constituent member that is described by the second line will have a rate equal to the DRI's rate.

A path DRI has two input legs, one referred to as the working leg and the other as the protection leg. It is possible for RTRV-PROTN-GRP to indicate some constituent members have been selected from the working leg while others have been selected from the protection leg. To determine whether or not all constituent members have been selected from the same leg, it is necessary to look at the **actunitaid** for each constituent member and determine if they are from the same leg.

Constituent Member List – Path protection group example for fixed mode :

```
RTRV-PROTN-GRP:LT-UNITE:1-1-#-#-10-1-25:123456::PATHDRI;  
LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-10-1-25:prototype=PATHDRI,wkg=1-1-#-#-08-1-25,  
protn=1-1-#-#-06-1-1,ppgname=\"group018\",htmr=100,  
wtr=5,dripathp=path2,rme=DISABLE,snctype=NA"  
"1-1-#-#-10-1-25,CML:cst=STS12C,swreq=NR,actunit=WKG,  
actunitaid=1-1-#-#-08-1-25,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
;
```

Constituent Member List – Path protection group example for pipe mode: The examples shows an STS12 pipe with 10 constituent members.

Note: This is for a future release.

```
RTRV-PROTN-GRP:LT-UNITE:1-1-#-#-10-1-25:123456::PATHDRI;  
LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-10-1-25: prototype=PATHDRI,htmr=100,rme=ENABLE,  
dripathp=path2,wkg=1-1-#-#-08-1-25,  
protn=1-1-#-#-06-1-1,snctype=NA, ..."  
"1-1-#-#-10-1-25,CML:cst=STS1,swreq=NR,actunit=WKG,  
actunitaid=1-1-#-#-08-1-25,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
"1-1-#-#-10-1-26,CML:cst=STS1,swreq=NR,actunit=PROTN,
```

```
actunitaid=1-1-#-#-06-1-2,wkgsiglvl=SF,  
protnsiglvl=NONE"  
"1-1-#-#-10-1-27,CML:cst=STS1,swreq=NR,actunit=WKG,  
actunitaid=1-1-#-#-08-1-27,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
"1-1-#-#-10-1-28,CML:cst=STS3C,swreq=SF,actunit=PROTN,  
actunitaid=1-1-#-#-06-1-4,wkgsiglvl=SF,protnsiglvl=NONE"  
"1-1-#-#-10-1-31,CML:cst=STS1,swreq=SD,actunit=PROTN,  
actunitaid=1-1-#-#-06-1-7,wkgsiglvl=SD,protnsiglvl=NONE"  
"1-1-#-#-10-1-32,CML:cst=STS1,swreq=NR,actunit=WKG,  
actunitaid=1-1-#-#-08-1-32,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
"1-1-#-#-10-1-33,CML:cst=STS1,swreq=NR,actunit=WKG,  
actunitaid=1-1-#-#-08-1-33,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
"1-1-#-#-10-1-34,CML:cst=STS1,swreq=NR,actunit=WKG,  
actunitaid=1-1-#-#-08-1-34,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
"1-1-#-#-10-1-35,CML:cst=STS1,swreq=NR,actunit=PROTN,  
actunitaid=1-1-#-#-06-1-11,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
"1-1-#-#-10-1-36,CML:cst=STS1,swreq=NR,actunit=WKG,  
actunitaid=1-1-#-#-08-1-36,wkgsiglvl=NONE,  
protnsiglvl=NONE"  
;
```

## Error responses (general)

### Validation rule: consistent *aid* and *protype*

If a range is specified for *aid* and *protype* is not consistent with that AID (for example, an AID of 1-1-fall and a protype value of 2F), then the following error response is returned.

**Error code:** IDNV - Input, Data Not Valid, inconsistent aid and protype

**Error responses (2-/4-fibre  
MS-SPRing/BLSR  
protection group)**

**Validation rule: consistent *aid* and *rid***

If both an aid and an rid are specified as input parameters and they are inconsistent, then the following error response is returned

Error code: IDNV - Input, Data Not Valid, inconsistent aid and rid

**Validation rule: *aid* range and *rid***

Validation rule: If a range is specified for aid and an rid is also specified as input parameters, then the following error response is returned:

Error code: IDNV - Input, Data Not Valid, no aid range in combination with rid

**Related TL1 messages**

- “ENT-PROTN-GRP: Enter protection group” (8-56)
- “ED-PROTN-GRP: Edit protection group” (8-80)
- “DLT-PROTN-GRP: Delete protection group” (8-97)
- “OPR-PROTNSW: Operate protection switch” (8-109)
- “RLS-PROTNSW: Release protection switch” (8-125)



## ENT-PROTN-GRP: Enter protection group

---

Protection groups are used in protection switching. A protection group is made up of one or more working (service) entities and a protection entity. In addition to the entities that comprise the protection group, the protection group has parameters that affect the characteristics of the protection group, such as whether or not the protection switching is revertive.

The ENT-PROTN-GRP command allows one to create a user-provisioned association of optical interface ports which is used in protection. Protection groups also determine the set of tributaries from and to which the user can provision cross-connections. If a circuit pack contains more than one optical port, the user can provision the type of protection for each port independently of the other ports. Unprotected operation is supported for optical interface ports that are not in a protection group.

When creating a protection group, the following must be true (only a subset of the validation rules is described here – see corresponding error response section):

- the individual ports must not already be in another protection group.
- there are no existing cross-connections on the ports.
- each port in a protection group must be on a different circuit pack.

Some types of protection groups are created automatically by the system or with another stimuli. ENT-PROTN-GRP cannot be used to create the following types of protection groups:

- switching equipment protection (created as part of slot assignment or pack auto-creation)
- controller equipment protection (created as part of slot assignment or pack auto-creation)
- path protection group (created as part of ENT-CRS for path-protected cross-connection).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1

Abortable: No

**Input format** Command Syntax: ENT-PROTN-GRP:*tid::ctag::prototype:spec\_block*;

**Input parameters** The command ENT-PROTN-GRP is only for the EP155 equipment protection applicable.

**Command parameters (EP155 equipment protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
3. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
The command ENT-PROTN-GRP is only applicable for EP155 equipment protection groups. Therefore the value range is restricted for this command to: - EQPTEP155.

**Command parameters (multiplex section/line protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
3. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

ENT-PROTN-GRP: Enter protection group

### **Command parameters (2-/4-fibre MS-SPRing/BLSR protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
3. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### **Spec block parameters (EP155 equipment protection group)**

1. pgid – protection group Id  
This parameter specifies the protection group Id as component of the protection group AID (AID field *TransProtGrpID*). For values less than 100, the leading zeros are optional. For example, either 007 or 7 is acceptable. If the user omits the leading zeros, the system will add them.  
Type: numeric string  
Range: 01 .. 99
2. protn – Protection Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. wkg – Worker Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### **Spec block parameters (multiplex section/line protection group)**

1. pgid – protection group Id  
This parameter specifies the protection group Id as component of the protection group AID (AID field *TransProtGrpID*). For values less than 100, the leading zeros are optional. For example, either 007 or 7 is acceptable. If the user omits the leading zeros, the system will add them.  
Type: numeric string  
Range: 1 .... 999
2. protn – Protection Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

ENT-PROTN-GRP: Enter protection group

3. protocol – APS Protocol  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. rme – Protection Reversion  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. wkg – Worker Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (2-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. east – East Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. pgid – protection group Id  
See definition in 1+1 ENT-PROTN-GRP.
4. rid – Ring Identification  
Option: The parameter is a mandatory parameter.  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. west – West Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (4-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. eastprotn – East Protection Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. eastwkg – East Worker Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

ENT-PROTN-GRP: Enter protection group

4. pgid – protection group Id  
See definition in 1+1 ENT-PROTN-GRP.
5. protnmode – Protection Switch Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. rid – Ring Identification  
Option: The parameter is a mandatory parameter.  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
7. westprotn – West Protection Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
8. westwkg – West Worker Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Output format** After receiving the ENT-PROTN-GRP command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

**Output parameters** See “RTRV-HDR: Retrieve header” (5-8) command Output parameters section for a normal completion response.

### Detailed behavior description

#### EP155 equipment protection group

The command establishes/creates a protection group of type as specified by means of parameter prototype. If prototype equals 'EQPTEP155', then one instance of EP155 protection group will be created. The creation of the protection group shall be reported by means of an ENT-PROTN-GRP notification. The initial protection state information is reported via protection switch notification.

#### Port impact due to EP155 protection group - port deletion

All ports related to the protection card of the protection group shall be deleted. This deletion shall be reported by means of: A set of



DLT-STM1E notifications if the protection port is an SDH port. The deletion of the objects leads to a clearance of pending alarms for these objects.

**Port impact due to EP155 protection group - PM impact due to port deletion**

PM monitoring for the deleted ports shall be stopped and current and history bins shall be deleted.

**Tributary impact due to EP155 protection group - tributary deletion**

All tributaries related to the protection port of the protection group shall be deleted. This deletion shall be reported by means of: A set of DLT-VC3 notifications if the protection port is an SDH port.

The number of tributaries to be deleted shall be derived from the port rate. The deletion of the objects leads to a clearance of pending alarms for these objects.

**Tributary impact due to EP155 protection group - group notification**

The notifications for the affected tributaries shall be a group notification. See definition in detailed behaviour description section of ENT-EQPT.

**PM impact due to tributary deletion**

PM monitoring for the deleted tributaries shall be stopped and current and history bins shall be deleted.

**1+1, 2F protection group**

The command establishes/creates a protection group of type as specified by means of parameter *prototype*. If prototype equals '1+1', then one instance of 1+1 MS/line protection group will be created. If prototype equals '2F', then one instance of type 2-fibre MS-SPRing/BLSR protection group will be created.

The creation of the protection group is reported by means of an ENT-PROTN-GRP notification. The initial protection state information is reported via protection switch notification.

**4 F protection group**

The command establishes/creates a protection group of type as specified by means of parameter *prototype*. If prototype equals 4F', then one instance of type 4 fibre MS-SPRing/BLSR protection group will be created.

ENT-PROTN-GRP: Enter protection group

If east side parameters (worker and protection) and west side (worker and protection) is specified in the command request, then a 2-sided MS-SPRing/BLSR protection group shall be created.

The creation of the protection group is reported by means of an ENT-PROTN-GRP notification. The initial protection state information is reported via protection switch notification.

### **Tributary impact due to MSP group - tributary deletion of MSP 1+1 protected connections**

All tributaries related to the protection port of the protection group are deleted if a MSP 1+1 is entered:

- a set of DLT-VC3 notifications if the protection port is an SDH port
- a set of DLT-STS1 notifications if the protection port is an SONET port

The number of tributaries to be deleted are derived from the port rate.

The deletion of the objects leads to a clearance of pending alarms for these objects.

### **Tributary impact due to MSP group - group notification**

The notifications for the affected tributaries shall be a group notification. See definition in detailed behaviour description section of ENT-EQPT.

### **Tributary impact due to MSP group - PM impact due to tributary deletion**

PM monitoring for the deleted tributaries is stopped and current and history bins are deleted.

## **Example input/output**

### **Equipment protection group**

The following example creates equipment protection group information:

```
ENT-PROTN-GRP:LT-UNITE::123456::EQPTEP155:wkg=1-1-#-#-21-
CP protn=1-1-#-#-22-CP,pgid=01;
LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

ENT-PROTN-GRP: Enter protection group

### Multiplex section/line protection group 1+1

The following example creates 1+1 multiplex section/line protection group information:

```
ENT-PROTN-GRP:LT-UNITE::123456::1+1:wkg=1-1-#-#-13-
    1,protn=1-1-#-#-14-1,
pgid=001;
    LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

### 2 fibre MS-SPRing/BLSR protection group

The following example shows the use of ENT-PROTN-GRP command to create a 2F protection group:

```
ENT-PROTN-GRP:LT-UNITE::123456::2F: east=1-1-#-#-10-
    1,west=1-1-#-#-08-1,pgid=003,rid="denver21";
    LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

### 4 fibre MS-SPRing/BLSR protection group

The following example shows the use of ENT-PROTN-GRP command to create a 4F protection group:

```
ENT-PROTN-GRP:LT-UNITE::123456::4F: eastwkg=1-1-#-#-10-1,
    eastprotn=1-1-#-#-11-1,westwkg=1-1-#-#-08-1,westprotn=1-
    1-#-#-09-1,pgid=003,rid="denver21";
    LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

### Error responses (EP155 equipment protection group)

#### Validation rule: XC are assigned to both EP155 packs

The creation of the EP155 Equipment Protection group shall be rejected, if XC exists on both EP155 pack.

**Error Code:** SNVS - Status, Not in Valid State, XC are assigned to both EP155 packs.

ENT-PROTN-GRP: Enter protection group

**Validation rule: XC are assigned to proposed protection EP155 pack**

The creation of the EP155 Equipment Protection group shall be rejected, if XC exists on the EP155 pack, which was specified as protection pack by the command.

Error Code: SNVS - Status, Not in Valid State, XC are assigned to the protection EP155 pack

**Validation rule: Transparent DCC connections**

Check of transparent DCC connections involving the circuit pack to be proposed as protection pack.

Error code: SNVS - Status, Not in Valid State, transparent DCC connections are existing at protection pack

**Validation rule: Not used as timing reference**

Check of that none of the ports of the proposed protection circuit pack is used as timing reference

Error code: SNVS - Status, Not in Valid State, at least one port of the protection pack is used as timing reference

**Validation rule: Not used for OW**

Check of that no connection to a OW port of the proposed protection circuit pack exists.

Error code: SNVS - Status, Not in Valid State, connection to OW port of the protection pack exists

**Validation rule: No XC loopbacks allowed**

Check of XC loopbacks involving the circuit pack to be proposed as protection pack.

Error code: SNVS - Status, Not in Valid State, XC loopbacks still exist at the protection pack

**Validation rule: No facility loopbacks allowed**

Check of facility loopbacks involving the circuit pack to be proposed as protection pack.

Error code: SNVS - Status, Not in Valid State, facility loopbacks still exist at the protection pack

**Validation rule: No test access session**

Tributaries related to the circuit pack to be proposed as protection pack must not be used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, Tributary used in test access session

**Validation rule: No port in *portClass* INNI**

The creation of the EP155 Equipment Protection group shall be rejected, if at least one of the affected ports in in port class INNI.

Error Code: SNVS - Status, Not in Valid State, port class must not be INNI

**Validation rule: No port in *portClass* EDGE**

The creation of the EP155 Equipment Protection group shall be rejected, if at least one of the affected ports in in port class EDGE.

Error Code: SNVS - Status, Not in Valid State, port class must not be EDGE

**Error responses (general)**

**Validation rule: port on different packs**

Each port, being a member within the protection group, shall be located on different circuit packs.

Error code: SNVS - Status, Not in Valid State, ports must be on different circuit packs.

**Validation rule: common interface type**

Each port being a member within the protection group, shall have the same interface standard i.e. all ports shall either operate in SONET mode or in SDH mode.

Error code: SNVS - Status, Not in Valid State, ports have different interface types.

**Validation rule: port is only in one group**

Each port shall be not a member of an already provisioned protection group.

Error code: SNVS - Status, Not in Valid State, port is already used in another protection group.

**Validation rule: supported port rate**

The port rate shall be supported for the specified protection type

Error code: SNVS - Status, Not in Valid State, port rate not supported for this protection type.

Value Range: See value range definition for the attribute *pgrate* in the “RTRV-PROTN-GRP: Retrieve protection group” (8-13) output section w.r.t. supported port rates for the different protection types.

**Validation rule: value range**

See value range definition for the attribute *pgrate* in the “RTRV-PROTN-GRP: Retrieve protection group” (8-13) output section w.r.t. supported port rates for the different protection types.

**Validation rule: common port rate**

Each port being a member within the protection group, shall have the same port rate.

Error code: SNVS - Status, Not in Valid State, ports have different port rates.

**Validation rule: no XC loopbacks on tribs**

There exist no cross-connection loopbacks on tributaries related to the specified ports

Error code: SNVS - Status, Not in Valid State, tributary is used in cross-connection loopback

**Validation rule: No test access session**

Tributaries related to the specified ports must not be used in a test access session either as tributary under test or as test access tributary.

Error Code: SNVS - Status, Not in Valid State, Tributary used in test access session

**Validation rule: XC pack is (pre-)provisioned**

There shall be at least one XC pack pre-provisioned or provisioned.

Error code: SNVS - Status, Not in Valid State, XC Pack not provisioned

**Validation rule: unique pgid**

The specified *pgid* is not already used by an already existing protection group AID of the same protection type.

Error code: SDNC - Status, Data Not Consistent, pgid is already used by another protection group of the same type.

**Error responses (multiplex  
section/line protection  
group)**

**Validation rule: no timing reference on protection port**

Protection port shall not be assigned to a timing reference.

Error code: SNVS - Status, Not in Valid State, protection port is assigned to a line timing reference.

**Validation rule: no out-of-service state on protection port**

Protection port shall not have the value 'OUTOFSERVICE' for the attribute *servcond*.

Error code: SNVS - Status, Not in Valid State, protection port is out-of-service.

**Validation rule: no timing reference on other port of protection unit**

No other port of unit related to the protection port shall not be assigned to a timing reference.

Error code: SNVS - Status, Not in Valid State, other port of protection unit is assigned to a line timing reference.

**Validation rule: No MSP 1:1 protection for bitrate STM-256**

The system shall reject an ENT command for the architecture 1:1 (prototype = 1xNOPT), if the port bitrate is STM-256.

Error Code: IDNC - Input, Data, Not Consistent, This MSP protection type not supported for a port with the indicated rate

**Validation rule: No MSP 1+1 optimized protection for SONET**

The system shall reject an ENT command for the architecture 1+1 (prototype = 1+1) if it is combined with the operation parameter value 'optimized' ( protocol =1+1\_OPTM) and if the port mode is SONET.

Error code: IDNC - Input, Data Not Consistent, MSP 1+1\_optimized not supported for SONET mode

**Validation rule: No MSP 1:1 protection for SONET**

The system shall reject an ENT command for the architecture 1:1 (protype = 1xNOPT), if the port mode is SONET.

Error Code: IDNC - Input, Data, Not Consistent, No MSP protection supported for SONET mode

**Validation rule: MSP type 1:1 is never non-revertive**

The system shall reject an ENT command for the architecture 1:1 (protype = 1xNOPT), if it is combined with the operation mode 'non-revertive' (rme=disabled).

Error Code: IDNC - Input, Data, Not Consistent, MSP Protection Type 1x1 is always revertive

**Validation rule: MSP type 1+1 unidirectional and revertive is not supported**

The system shall reject an ENT command for the architecture 1+1 (protype = 1+1), if it is combined with unidirectional operation (protocol = 1+1\_UNI) and the operation mode 'revertive' (rme=enabled)

Error Code: IDNC - Input, Data, Not Consistent, revertive mode not supported for MSP Protection Type 1+1 unidirectional

**Validation rule: only MSP 1+1 can be optimized**

The system shall reject an ENT command for any architecture beside 1+1 (protype = 1+1) if it is combined with the operation parameter value 'optimized'.

Error Code: IDNC - Input, Data, Not Consistent, Optimized exists only with 1+1 Protection Type

**Validation rule: No MSP 1+1 optimized for bitrate STM-256**

The system shall reject an ENT command for the architecture 1+1 (protype = 1+1), if combined with the parameter protocol=OPTM and the port bitrate STM-256.

Error Code: IDNC - Input, Data, Not Consistent, This MSP protection type not supported for a port with the indicated rate

**Validation rule: No XC on protection tribs**

There shall exist no cross-connections on protection tributaries related to the specified ports.



ENT-PROTN-GRP: Enter protection group

Error Code: SNVS - Status, Not in Valid State, protection tributary is used in cross-connection

**Validation rule: No MSP 1+1 bidirectional and non-revertive on other than STM-64**

The system shall reject an ENT command for the architecture 1+1 (prototype = 1+1), if combined with the parameter protocol=1+1\_BIDIR and a port bitrate other than STM-64.

Error Code: IDNC - Input, Data Not Consistent, This MSP protection type not supported for a port with the indicated rate

**Validation rule: MSP type 1+1\_optimized is never revertive**

The system shall reject an ENT command for the architecture 1+1 (prototype = 1+1) if it is combined with the operation parameter value 'optimized' and with the operation mode 'revertive' (rme=enab.).

Error Code: IDNC - Input, Data, Not Consistent, MSP 1+1\_Optimized is always non-revertive

**Validation rule: supported *portClass***

Ports must not be of *portClass* INNI

Error Code: SNVS - Status, Not in Valid State, portClass must not be INNI

**Validation rule: no EDGE protection port for 1+1 MSP**

In case of a 1+1 MSP group the specified protection port shall not be of portClass EDGE

Error Code: SNVS - Status, Not in Valid State, portClass may not be EDGE

**Validation rule: no EDGE protection port for 1:1 MSP**

In case of a 1:1 MSP group the specified protection port shall not be of portClass EDGE.

Error Code: SNVS - Status, Not in Valid State, portClass may not be EDGE

**Error responses (2-fibre  
MS-SPRing/BLSR  
protection group)**

**Validation rule: unique *rid***

The specified *rid* shall not be already used by an already existing protection group of type 2F, 4F.

Error code: IDNV - Input, Data Not Valid, rid is already used by another protection group

**Validation rule: dcc enabled**

If the parameter ard (automatic ring discovery) is not DISABLED, for each side at least one dcc channel (section/dcc-r or line/dcc-m) shall be enabled.

Error code: SNVS - Status, Not in Valid State, no dcc channel enabled

**Validation rule: trib bandwidth is not greater as service bandwidth**

The service bandwidth shall be greater as the provisioned tributary rates (input or output) for all ports; i.e. VC-4-16c/STS-48c shall not be provisioned as tributary rate for STM-16/OC-48 ports or VC-4-64c/STS-192c shall not be provisioned as tributary rate for STM-64/OC-192 ports

Error code: SNVS - Status, Not in Valid State, tributary rate not supported for protection with this port rate.

**Validation rule: supported *portClass***

Ports must not be of *portClass* INNI

Error Code: SNVS - Status, Not in Valid State, portClass must not be INNI

**Validation rule: no XC on tribs**

There shall exist no cross-connections on tributaries related to the specified ports.

Error Code: SNVS - Status, Not in Valid State, tributary is used in cross-connection

**Error responses (4-fibre  
MS-SPRing/BLSR  
protection group)**

**Validation rule: unique *rid***

The specified *rid* shall not be already used by an already existing protection group of type 2F, 4F.

Error code: IDNV - Input, Data Not Valid, rid is already used by another protection group

**Validation rule: dcc enabled**

If the parameter *ard* (automatic ring discovery) is ENABLED, for each worker port at least one dcc channel (section/dcc-r or line/dcc-m) shall be enabled.

Error code: SNVS - Status, Not in Valid State, no dcc channel enabled

**Validation rule: no timing reference on protection port**

Protection port shall not be assigned to a timing reference.

Error code: SNVS - Status, Not in Valid State, protection port is assigned to a line timing reference.

**Validation rule: no out-of-service state on protection port**

Protection port shall not have the value 'OUTOFSERVICE' for the attribute *servcond*.

Error code: SNVS - Status, Not in Valid State, protection port is out-of-service.

**Validation rule: no timing reference on other port of protection unit**

No other port of unit related to the protection port shall not be assigned to a timing reference.

Error code: SNVS - Status, Not in Valid State, other port of protection unit is assigned to a line timing reference.

**Validation rule: SDH ports for TOP**

If *protnmode* equals 'SHORTENED' (TOP), then all specified member ports shall have the interface standard SDH.

Error code: SNVS - Status, Not in Valid State, SONET port not allowed for TOP

**Validation rule: complete side information**

The parameters *eastwkg*, *eastprotn*, *westwkg*, *westprotn* must be present in the request.

Error code: IDNV - Input, Data Not Valid, side information is not complete

**Validation rule: supported *portClass***

Ports must not be of *portClass* INNI

Error Code: SNVS - Status, Not in Valid State, *portClass* must not be INNI

Protection ports must not be of *portClass* EDGE

Error Code: SNVS - Status, Not in Valid State, *portClass* of protection port must not be EDGE

**Validation rule: supported *portClass* for TOP**

If *protnmode* equals SHORTENED or TOPEX (both are TOP), then none of the specified member ports shall have the *portClass* EDGE.

Error code: SNVS - Status, Not in Valid State, *portClass* must not be EDGE for TOP

**Validation rule: asymmetric ring only with manual ring provisioning**

An asymmetric ring only is allowed in case of manually providing the ring map information by setting the parameter *ard* to DISABLE.

Error Code: SNVS - Status, Not in Valid State, automatic ring discovery enabled

**Validation rule: no XC on tribs**

There shall exist no cross-connections on tributaries related to the specified ports.

Error Code: SNVS - Status, Not in Valid State, tributary is used in cross-connection

**Related TL1 messages**

- “RTRV-PROTN-GRP: Retrieve protection group” (8-13)
- “ENT-CRS: Enter cross-connection” (7-25)
- “ED-PROTN-GRP: Edit protection group” (8-80)
- “DLT-PROTN-GRP: Delete protection group” (8-97)

ENT-PROTN-GRP: Enter protection group

- “OPR-PROTNSW: Operate protection switch” (8-109)
- “RLS-PROTNSW: Release protection switch” (8-125)
- “ED-MAP-RING: Edit map ring” (8-165)
- “SET-MAP-RING: Set map ring” (8-168).



## ENT-PROTN-GRP notification

---

**Output format** The ENT-PROTN-GRP notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The following syntax is used for 1+1 equipment, 1+1/1:1 multiplex section/line, 2-/4-fibre MS-SPRing/BLSR, path protection group.

Syntax: ENT-PROTN-GRP:*aid:prototype:spec\_block*;

### Output parameters

#### Command parameters (1+1 Equipment protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

#### Command parameters (multiplex section/line protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

#### Command parameters (2-fibre MS-SPRing/BLSR protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (4-fibre MS-SPRing/BLSR protection group)**

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. protype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (Path protection group)**

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. protype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (1+1 Equipment protection group)**

1. protn – Protection Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. wkg – Worker Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (multiplex section/line protection group)**

1. apspn – MSP-APS ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. dcclmsprotmd – DCC Line/MS Protection Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. dccsrprotmd – DCC Sect/RS Protection Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. protn – Protection Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. protocol – APS Protocol  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

6. rme – Protection Reversion  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
7. wkg – Worker Unit  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
8. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (2-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. blsrpn – MSSPRING-BLSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. east – East Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. rid – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. west – West Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (4-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. blsrpn – MSSPRING-BLSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).



3. eastprotn – East Protection Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. eastwkg – East Worker Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. protnmode – Protection Switch Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. rid – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
7. swtr – Span Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
8. westprotn – West Protection Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
9. westwkg – West Worker Port  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
10. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (Path protection group)**

1. dripathpn – SNCP-UPSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. htmr – Hold-Off Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. ppgname – Path protection group Name  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. protn – Protection Tributary  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

5. rme – Protection Reversion  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. snctype – SNC Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
7. wkg – Worker Tributary  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
8. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### Example output

#### 1+1 Equipment Protection Group

The following example reports the creation of an 1+1 equipment protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:ENT-PROTN-GRP:
  1-1-estgrp:EQPTSWFBR:wkg=1-1-#-#-xcw-cp,
  protn=1-1-#-#-xcp-cp"
;
```

#### Multiplex section/line protection group 1+1

The following example reports the creation of an 1+1 multiplex section/line protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:ENT-PROTN-GRP:
  1-1-o01:1+1:wkg=1-1-#-#-13-1,protn=1-1-#-#-14-1,
  wtr=5,apspn=DEFAULT, dcclmsprotmd=DISABLE,
  dccsrsprotmd=DISABLE,protocol=1+1_UNI,rme=DISABLE"
;
```

#### 2 fibre MS-SPRing/BLSR protection group

The following example reports the creation of a 2 fibre MS-SPRing/BLSR protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:ENT-PROTN-GRP:
1-1-t001:2F: east=1-1-#-#-13-1,west=1-1-#-#-14-1,
rid=\"denver\",wtr=5,blsrpn=DEFAULT"
;
```

#### 4 fibre MS-SPRing/BLSR protection group

The following example reports the creation of a 4 fibre MS-SPRing/BLSR protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:ENT-PROTN-GRP:
1-1-f001:4F: eastwkg=1-1-#-#-13-1,
eastprotn=1-1-#-#-15-1,westwkg=1-1-#-#-14-1,
westwkg=1-1-#-#-16-1,rid=\"denver\",
protnmode=LOOPBACK,swtr=5,wtr=5,blsrpn=DEFAULT"
;
```

#### Path protection group

The following example reports the creation of a path protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:ENT-PROTN-GRP:
1-1-#-#-10-1-25:PATHDRI:wkg=1-1-#-#-08-1-25,
protn=1-1-#-#-06-1-1,ppgname=\"group018\",
htmr=100,wtr=5,dripathp=path2,rme=DISABLE,
snctype=NA"
;
```



## ED-PROTN-GRP: Edit protection group

---

The ED-PROTN-GRP command allows one to modify parameter/attributes related to an already existing protection group instance of any protection group type.

Note: Manual protection switching is done by means of commands OPR-PROTNSW, RLS-PROTNSW.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1  
Abortable: No

### Input format

#### Multiplex section/line protection group

Command Syntax: ED-PROTN-GRP:*tid:aid:ctag::prototype:spec\_block;*

#### 2-/4-fibre MS-SPRing/BLSR protection group

Command Syntax: ED-PROTN-GRP:*tid:[aid]:ctag::prototype,[rid]:spec\_block;*

#### Path protection group

Command Syntax: ED-PROTN-GRP:*tid:[aid]:ctag::prototype,[ppgname]:spec\_block;*

### Input parameters

#### Command parameters (multiplex section/line protection group)

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a 1+1 multiplex section/line protection group or the aid of a 1:1 multiplex section/line protection group (only R3.0 and later) or an port aid being a member of the group.  
Type: AID  
Range: OnePlusOne\_ProtGrpAID (not ranged) or NByOne\_ProtGrpAID (not ranged) or SPortAID (not ranged).

3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13). The command parameter prototype is used for additional identification beside the aid, it is not usable to change the value of *prototype*.

**Command parameters (2-/4-fibre MS-SPRing/BLSR protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a MS-SPRing/BLSR protection group or an port aid being a member of the group.  
Option: If *rid* is specified, then *aid* can be omitted.  
Type: AID.  
Range: TwoFibre\_ProtGrpAID (not ranged) or FourFibre\_ProtGrpAID (not ranged) or SPortAID (not ranged).
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. rid – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If *aid* is specified, then *rid* can be omitted.

### Command parameters (path protection group)

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies a path protection group aid or an input tributary aid being a member of the group in combination with *ppgname*.  
Option: If *ppgname* is specified, then *aid* can be omitted or used as an input tributary aid.  
Type: AID.  
Range: Path\_ProtGrpAID or STS1NumAID or VCGNumAID.
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. ppgname – Path protection group Name  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If the specified *aid* is a path protection group aid (which is equal to the output tributary aid), then *ppgname* can be omitted. If the specified aid is an input tributary aid, then *ppgname* must be specified to be unique. If an input value is specified for *ppgname* and none is specified for *aid*, then command operates on all protection groups that have the specified path protection group name. If input values are specified for *aid* and *ppgname* then the command operates on all protection groups that have the specified *aid*, *ppgname* pair. The command will complete successfully if there is no protection group described by *aid*, *ppgname*.

### Spec block parameters (multiplex section/line protection group)

1. apspn – MSP-APS ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. dclmsprotmd – DCC Line/MS Protection Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

3. dccsrprotmd – DCC Sect/RS Protection Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (2-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. blsrpn – MSSPRING-BLSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. newrid – New Ring Identification  
See definition of parameter *rid* “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (4-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. blsrpn – MSSPRING-BLSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. newrid – New Ring Identification  
See definition of parameter *rid* “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. protmode – Protection Switch Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

5. swtr – Span Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (path protection group)**

1. dripathpn – SNCP-UPSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. htmr – Hold-Off Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. newppgname – New Path protection group Name  
See definition of parameter *ppgname* “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. rme – Protection Reversion  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. snctype – SNC Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Output format** After receiving the ED-PROTN-GRP command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

**Output parameters** See “RTRV-HDR: Retrieve header” (5-8) command Output parameters section for a normal completion response.

**Detailed behavior description** The command modifies attributes for the existing protection group instances identified by *aid*, *rid*, *ppgname* of type as specified by



means of parameter *prototype*. The corresponding attribute of the protection group instance is updated with the value as specified in command block.

The command parameter *newrid* causes an update of the attribute *rid*. The command parameter *newppgname* causes an update of the attribute *ppgname*.

The update of the attributes is reported by means of an ED-PROTN-GRP notification.

### **Multiplex section/Line protection group**

Beside changing the specified attribute value, the modification shall also have the side effects as described by means of the following scenario:

1. Change of Protection Mode. An update for the attributes protocol, *rme* may cause an update of attribute *swreq*. The update is reported by means of a protection switch notification.

### **DCC protection as part of 1+1 multiplex section/line protection**

If DCC protection is enabled for section/rs dcc channels (value of *dccrsprotmd* equals ENABLE), then following updates for DCC channels shall be done.

1. The protection mode (attribute *dccprottp*) of the dcc channel of type 'SECTION' associated with the worker port shall be set to '1+1' protected. This update shall be reported by means of a ED-FECOM notification for the changed attribute.

If DCC protection is disabled for section/rs dcc channels (value of *dccrsprotmd* equals DISABLE), then following updates for DCC channels shall be done.

1. The protection mode (attribute *dccprottp*) of the dcc channel of type 'SECTION' associated with the worker port shall be set to '0X1' unprotected. This update shall be reported by means of a ED-FECOM notification for the changed attribute.

If DCC protection is enabled for line/ms dcc channels (value of *dclmsprotmd* equals ENABLE), then following updates for DCC channels shall be done.

1. The protection mode (attribute *dccprottp*) of the dcc channel of type 'LINE' associated with the worker port shall be set to '1+1' protected. This update shall be reported by means of a ED-FECOM notification for the changed attribute.

If DCC protection is disabled for line/ms dcc channels (value of `dcclmsprotmd` equals `DISABLE`), then following update for DCC channels shall be done.

1. The protection mode (attribute `dccprottp`) of the dcc channel of type 'LINE' associated with the worker port shall be set to '0X1' unprotected. This update shall be reported by means of a ED-FECOM notification for the changed attribute.

### Path protection group

The command modifies certain attributes for existing protection group instances identified by *aid*, *ppgname* of type 'PATHDRI'.

Beside changing the specified attribute value, the modification shall also have the side effects as described by means of the following scenario:

1. Change of Protection Type: An update for the attribute *snctype* causes an update of the same attribute for all protection group instances sharing one or both inputs of the protection group which was identified by means of the command input. The additional modification for these protection group instances is reported by means of additional ED-PROTN-GRP notifications.

## Example input/output

### Multiplex section/line protection group 1+1

The following example assigns a wait-to-restore time of 8 minutes to the protection group named 1-1-o011 which is of type 1+1:

```
ED-PROTN-GRP:LT-UNITE:1-1-o011:123456::1+1:wtr=8;
    LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

### 2 fibre MS-SPRing/BLSR protection group

The following example assigns a wait-to-restore time of 10 minutes to the two fiber protection group that is identified by ring id *denver21*. It also renames the ring id to *dallas3*:

```
ED-PROTN-GRP:LT-UNITE::123456::2F,"denver21":
newrid="dallas3",wtr=10;
    LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

#### 4 fibre MS-SPRing/BLSR protection group

The following example assigns a wait-to-restore time of 10 minutes to the four fiber protection group that is identified by ring id *denver21*.

It also renames the ring id to *dallas3*:

```
ED-PROTN-GRP:LT-UNITE::123456::4F,"denver21":  
newrid="dallas3",wtr=10;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### Path protection group

The following example assigns a holdoff time of 100 msec to the path protection group that is identified by path protection group name *denver21*. It also renames the path protection group name to *dallas3*:

```
ED-PROTN-GRP:LT-UNITE::123456::PATHDRI,, "denver21":  
newppgname="dallas3",htmr=10;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### Error responses (Multiplex section/Line protection group)

##### Validation rule: dcc protection side is enabled

The dcc channel (section/line) of the protection side shall be disabled if corresponding dcc protection is enabled (section/line).

Error Code: SNVS - Status, Not in Valid State, protection  
dcc channel is enabled

##### Validation rule: dcc protection: working side is disabled

The dcc channel (section/line) of the working side shall be enabled if corresponding dcc protection is enabled (section/line).

Error Code: SNVS - Status, Not in Valid State, working dcc  
channel is disabled

##### Validation rule: dcc protection: protection side is active

The system shall reject the disabling of the dcc protection, if the protection side of dcc protection is the active one.

Error Code: SNVS - Status, Not in Valid State, dcc  
protection side carries traffic

**Validation rule: MSP type 1:1 is never non-revertive**

The system shall reject an ED command for the architecture 1:1 (protype = 1xNOPT), if it is combined with the operation mode 'non-revertive' (rme=disabled).

Error Code: IDNC - Input, Data, Not Consistent, MSP  
Protection Type 1x1 is always revertive

**Validation rule: MSP type 1+1 unidirectional and revertive is not supported**

The system shall reject an ED command for the architecture 1+1 (protype = 1+1), if it is combined with unidirectional operation (protocol = 1+1\_UNI) and the operation mode 'revertive' (rme=enabled)

Error Code: IDNC - Input, Data, Not Consistent, revertive  
mode not supported for MSP Protection Type 1+1  
unidirectional

**Validation rule: No MSP 1:1 protection for SONET**

The system shall reject an ED command for the architecture 1:1 (protype = 1xNOPT), if the port mode is SONET.

Error Code: IDNC - Input, Data, Not Consistent, No MSP  
protection supported for SONET mode

**Validation rule: no change between MSP type 1+1\_optimized and other MSP types**

The system shall reject an ED command to change the operation parameter from any valid value to the value 'optimized'. The system shall reject an ED command to change the operation parameter from the value 'optimized' to any other value.

Error Code: SNVS - Status, Not in Valid State, This Change  
of Protection Architecture not allowed, deprovision first

**Validation rule: MSP type 1+1\_optimized is never revertive**

The system shall reject an ED command to change the operation mode parameter rme if the current operation mode is 'optimized'.

Error Code: IDNC - Input, Data, Not Consistent, MSP  
1+1\_Optimized is always non-revertive

**Validation rule: MSP type 1:1 bidirectional is never revertive**

The system shall reject an ED command to change the operation mode parameter *rme* if the current operation mode is '1+1\_BIDIR'.

Error Code: IDNC - Input, Data Not Consistent, MSP 1+1\_BIDIR is always non-revertive

**Validation rule: Transparent DCC for DCC Line/MS protection mode**

The LINE DCC channel of protecting port shall not be used in a transparent DCC cross-connection if DCC Line/MS Protection Mode - *dcclmsprotmd* - will be set to ENABLED.

Error Code: SNVS - Status, Not in Valid State, DCC channel used in transparent DCC cross connection

**Validation rule: Transparent DCC for DCC Sect/RS protection mode**

The SECTION DCC channel of protecting port shall not be used in a transparent DCC cross-connection if DCC Sect/RS Protection Mode - *dcslrsprotmd* - will be set to ENABLED.

Error Code: SNVS - Status, Not in Valid State, DCC channel used in transparent DCC cross connection

**Error responses (2-fibre  
MS-SPRing/BLSR  
protection group)**

**Validation rule: unique rid**

The specified *newrid* is not already used by an already existing protection group of type 2F, 4F.

Error code: IDNV - Input, Data Not Valid, rid is already used by another protection group

**Validation rule: consistent aid and rid**

If both an *aid* and an *rid* are specified as input parameters and they are inconsistent, then the following error response is returned

Error code: IDNV - Input, Data Not Valid, inconsistent aid and rid

**Error responses (4-fibre  
MS-SPRing/BLSR  
protection group)**

**Validation rule: unique *rid***

The specified *newrid* is not already used by an already existing protection group of type 2F, 4F.

Error code: IDNV - Input, Data Not Valid, rid is already used by another protection group

**Validation rule: consistent *aid* and *rid***

If both an aid and an rid are specified as input parameters and they are inconsistent, then the following error response is returned

Error code: IDNV - Input, Data Not Valid, inconsistent aid and rid

**Validation rule: no multiple added XCs for TOP**

If *protnmode* is changed to SHORTENED and there exists a path protection group having one trib of worker port as output (so-called multiple added XC) then the following error response is returned.

Error code: SNVS - Status, Not in Valid State, multiple added XCs for TOP

**Validation rule: SDH ports for TOP**

If *protnmode* is changed to SHORTENED then all member ports shall have the interface standard SDH.

Error code: SNVS - Status, Not in Valid State, SONET port not allowed for TOP

**Validation rule: Idle ring node for protocol conversion**

If *protnmode* is changed then ringndst shall be 'IDLE' or 'SUSPENDED-IDLE'.

Error code: SNVS - Status, Not in Valid State, node not in idle state.

**Validation rule: supported *portClass* for TOP**

If *protnmode* equals SHORTENED or TOPEX (both are TOP), then none of the specified member ports shall have the *portClass* EDGE.

Error code: SNVS - Status, Not in Valid State, portClass must not be EDGE for TOP

**Validation rule: Asymmetric ring only with manual ring provisioning**

An asymmetric ring only is allowed in case of manually providing the ring map information by setting the parameter `ard` to `DISABLE`.

Error Code: SNVS - Status, Not in Valid State, automatic ring discovery enabled

**Error responses (path protection group)**

**Validation rule: Maximum number of ppgnames exceeded**

The new *ppgname* shall not exceed the maximum number of 768 ppgnames (i.e. is already in use for 768 other path protection groups).

Error code: SSRE - Status, System Resources Exceeded, limit of ppgnames exceeded

**Related TL1 messages**

- “RTRV-PROTN-GRP: Retrieve protection group” (8-13)
- “ENT-PROTN-GRP: Enter protection group” (8-56)
- “DLT-PROTN-GRP: Delete protection group” (8-97)
- “OPR-PROTNSW: Operate protection switch” (8-109)
- “RLS-PROTNSW: Release protection switch” (8-125)



## ED-PROTN-GRP notification

---

**Output format** The ED-PROTN-GRP notification shall use the general format of a REPT DBCHG (Report Database Change) notification. The following syntax is used for 1+1 multiplex section/line, 2-/4-fibre MS-SPRing/BLSR, path protection group.

Syntax: ED-PROTN-GRP:*aid:prototype:spec\_block*;

### Output parameters

#### Command parameters (multiplex section/line protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

#### Command parameters (2-fibre MS-SPRing/BLSR protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

#### Command parameters (4-fibre MS-SPRing/BLSR protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).



### **Command parameters (Path protection group)**

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### **Spec block parameters (multiplex section/line protection group)**

1. apspn – MSP-APS ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. dcclmsprotmd – DCC Line/MS Protection Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. dccsrprotmd – DCC Sect/RS Protection Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. protocol – APS Protocol  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. rme – Protection Reversion  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### **Spec block parameters (2-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. blsrpn – MSSPRING-BLSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

3. newrid – New Ring Identification  
See definition of *rid* “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (4-fibre MS-SPRing/BLSR protection group)**

1. ard – Automatic Ring Discovery  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. blsrpn – MSSPRING-BLSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. newrid – New Ring Identification  
See definition of *rid* “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. protnmode – Protection Switch Mode  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. swtr – Span Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Spec block parameters (Path protection group)**

1. dripathpn – SNCP-UPSR ASAP Pointer  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. htmr – Hold-Off Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. newppgname – New Path Protection Group Name  
See definition of *ppgname* “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

4. protn - Protection Tributary  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. rme – Protection Reversion  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
6. snctype – SNC Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
7. wkg – Worker Tributary  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
8. wtr – Wait To Restore Time  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### Example output

#### Multiplex section/line protection group (1+1)

The following example reports the modification of wait-to restore timer for an 1+1 multiplex section/line protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:ED-PROTN-GRP:1-1-
  o001:1+1:wtr=8"
;
```

#### 2 fibre MS-SPRing/BLSR protection group

The following example reports the modification of wait-to-restore time and ring id for a two fiber protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:ED-PROTN-GRP:1-1-
  t001:2F:newrid=\"dallas3\",wtr=10"
;
```

#### 4 fibre MS-SPRing/BLSR protection group

The following example reports the modification of wait-to-restore time and ring id for a four fiber protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:ED-PROTN-GRP:1-1-
  f001:4F:newrid=\"dallas3\",wtr=10"
;
```

### **Path protection group**

The following example reports the modification of hold off time and path protection group name for a path protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:ED-PROTN-GRP:1-1-#-#-10-1-
  25:PATHDRI:newppgname=\"dallas3\",htmr=10"
;
```



## DLT-PROTN-GRP: Delete protection group

---

The DLT-PROTN-GRP command allows to delete protection groups which were previously created via ENT-PROTN-GRP.

Some types of protection groups are deleted in the context with another stimuli. DLT-PROTN-GRP cannot be used to delete the following types of protection groups:

- switching and controller equipment protection group (deleted as part of delete circuit pack)
- path protection group (deleted as part of DLT-CRS for path-protected XC).

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1  
Abortable: No

### Input format

#### EP155 equipment protection group

The command DLT-PROTN-GRP is only for the EP155 equipment protection applicable.

Command Syntax: DLT-PROTN-GRP:*tid:aid:ctag::prototype*;

#### Multiplex section/line protection group

Command Syntax: DLT-PROTN-GRP:*tid:aid:ctag::prototype*;

#### 2-/4-fibre MS-SPRing/BLSR protection group

Command Syntax: DLT-PROTN-GRP:*tid:[aid]:ctag::prototype, [rid]*;

### Input parameters

#### Command parameters (EP155 equipment protection group)

1. **tid** – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. **aid** – Access Identifier  
This parameter specifies the aid of the equipment protection group.  
Type: AID  
Range: EP155ProtGrpAID

3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (multiplex section/line protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a 1+1 multiplex section/line protection group or the aid of a 1:1 multiplex section/line protection group (only R3.0 and later) or an port aid being a member of the group.  
Type: AID  
Range: OnePlusOne\_ProtGrpAID (not ranged) or NByOne\_ProtGrpAID (not ranged) or SPortAID (not ranged)
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (2-/4-fibre MS-SPRing/BLSR protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a MS-SPRing/BLSR protection group or an port aid being a member of the group.  
Option: If *rid* is specified, then *aid* can be omitted.  
Type: AID  
Range: TwoFibre\_ProtGrpAID (not ranged) or FourFibre\_ProtGrpAID (not ranged) or SPortAID (not ranged).
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).

4. **prototype** – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. **rid** – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If **aid** is specified, then **rid** can be omitted.

**Output format** After receiving the DLT-PROTN-GRP command, the following normal completion response is returned:

```
sid date time  
M ctag COMPLD  
;
```

**Output parameters** See “RTRV-HDR: Retrieve header” (5-8) command OUTPUT PARAMETERS section for a normal completion response.

#### Detailed behavior description

##### 1+1, 2F protection group

The command removes/deletes the protection group of type as specified by means of parameter **prototype**. If **prototype** equals '1+1', then one instance of 1+1 MS/line protection group is deleted. If **prototype** equals '2F', then one instance of type 2-fibre MS-SPRing/BLSR protection group will be deleted.

The deletion of the protection group is reported by means of an DLT-PROTN-GRP notification.

##### 4F protection group

The command removes/deletes the protection group of type as specified by means of parameter **prototype**. If **prototype** equals 4F', then one instance of type 4 fibre MS-SPRing/BLSR protection group shall be deleted.

The deletion of the protection group is reported by means of an DLT-PROTN-GRP notification.

### **Multiplex section/Line protection group - DCC protection as part of 1+1 multiplex section/line protection**

If DCC protection is enabled for section/rs dcc channels (value of dccrsprotmd equals ENABLE), then following updates for DCC channels shall be done.

1. The dcc channel of type 'SECTION' associated with the protection port shall be created. This update shall be reported by means of a ENT-FECOM notification.
2. The protection mode (attribute dccprottp) of the dcc channel of type 'SECTION' associated with the worker port shall be set to '0X1' unprotected. This update shall be reported by means of a ENT-FECOM notification for the changed attribute.

If DCC protection is enabled for line/ms dcc channels (value of dclmsprotmd equals ENABLE), then following updates for DCC channels shall be done.

1. The dcc channel of type 'LINE' associated with the protection port shall be created. This update shall be reported by means of a ENT-FECOM notification.
2. The protection mode (attribute dccprottp) of the dcc channel of type 'LINE' associated with the worker port shall be set to '0X1' unprotected. This update shall be reported by means of a ENT-FECOM notification for the changed attribute.

### **Multiplex section/Line protection group - tributary impact due to 1+1 protection group - port redefinition due to 1+1 MSP protection group deletion**

Tributaries signal rates of the protection port shall be set to default values (parameters inputsig, unequiposig), because they had been deleted at the enter time of the MSP 1+1 protection group.

As a side effect, the value of parameter crstat may also change if the port is operating in fixed mode

The update of the mentioned parameters shall be reported by means of:

- a ED-STM<n> notification if the protection port is an SDH port
- a ED-OC<n> notification if the protection port is an SONET port

The value for <n> is derived from the port rate.



**Multiplex section/Line protection group - tributary impact due to 1+1 protection group - tributary creation due to 1+1 MSP protection group deletion**

Tributaries related to the protection port of the protection group shall be recreated with default values, because they had been deleted at the enter time of the MSP 1+1 protection group.

This creation shall be reported by means of:

- a set of ENT-VC3 notifications if the protection port is an SDH port
- a set of ENT-STS1 notifications if the protection port is an SONET port

The number of tributaries to be created shall be derived from the port rate.

The notifications for the affected tributaries shall be a group notification. See definition in detailed behaviour description section of ENT-EQPT.

**2/4 fibre MS-SPRING/BLSR protection group**

If the related ports are of portClass=EDGE any existing information in the loca, locz parameters of the related tributaries shall be deleted (i.e. set to the default value). This shall be reported by means of an ED-STS1 (istd=SONET) or ED-VC3 (istd=SDH) notification.

**EP155 equipment protection group - 1+1 equipment protection group**

The command shall remove/delete the protection group of type as specified by means of parameter prototype. If prototype equals 'EQPTEP155', then one instance of EP155 equipment protection group shall be deleted.

The deletion of the protection group shall be reported by means of an DLT-PROTN-GRP notification.

**EP155 equipment protection group - port impact due to EP155 protection group deletion**

Ports related to the protection card of the protection group shall be recreated with default values, because they had been deleted at the enter time of the protection group.

This creation shall be reported by means of a set of ENT-STM1E notifications.

### **EP155 equipment protection group - tributary creation due to EP155 protection group deletion**

Tributaries related to the protection card of the protection group shall be recreated with default values, because they had been deleted at the enter time of the protection group.

This creation shall be reported by means of a set of ENT-VC3 notifications if the protection port is an SDH port.

The number of tributaries to be created shall be derived from the port rate.

The notifications for the affected tributaries shall be a group notification. See definition in detailed behaviour description section of ENT-EQPT.

### **Example input/output**

#### **Equipment protection group**

The following example deletes EP155 equipment protection group:

```
DLT-PROTN-GRP:LT-UNITE:1-1-eep01:123456::EQPTEP155;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### **Multiplex section/line protection group 1+1**

The following example deletes 1+1 multiplex section/line protection group:

```
DLT-PROTN-GRP:LT-UNITE:1-1-o001:1+1:123456::1+1;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### **2 fibre MS-SPRing/BLSR protection group**

The following example deletes 2F MS-SPRing/BLSR protection group:

```
DLT-PROTN-GRP:LT-UNITE:1-1-t001:123456::2F;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### **4 fibre MS-SPRing/BLSR protection group**

The following example deletes 4F MS-SPRing/BLSR protection group:

```
DLT-PROTN-GRP:LT-UNITE:1-1-f001:123456::4F;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### **Error responses (EP155 equipment protection group)**

##### **Validation rule: protection unit is active**

If the protecting unit is the active unit , then the following error response shall be returned.

Error Code: SNVS - Status, Not in Valid State, protection unit is activ

#### **Error responses (general)**

##### **Validation rule: no XC loopback on tribs**

There exists no cross-connection loopbacks on tributaries related to ports being a member of the specified protection group.

Error code: SNVS - Status, Not in Valid State, tributary is used in cross-connection loopback

##### **Validation rule: no test access session active**

Tributaries related to ports being a member of the specified protection group must not be used in a test access session either as tributaries under test or as test access tributaries.

Error Code: SNVS - Status, Not in Valid State, tributary used in test access session

#### **Error responses (2-fibre MS-SPRing/BLSR protection group)**

##### **Validation rule: consistent aid and rid**

If both an aid and an rid are specified as input parameters and they are inconsistent, then the following error response is returned.

Error code: IDNV - Input, Data Not Valid, inconsistent aid and rid

**Validation rule: no XC on tribs**

There shall exist no cross-connections on tributaries related to ports being a member of the specified protection group.

Error Code: SNVS - Status, Not in Valid State, tributary is used in cross-connection

**Error responses (4-fibre  
MS-SPRing/BLSR  
protection group)**

**Validation rule: consistent aid and rid**

If both an aid and an rid are specified as input parameters and they are inconsistent, then the following error response is returned.

Error code: IDNV - Input, Data Not Valid, inconsistent aid and rid

**Validation rule: no XC on tribs**

There shall exist no cross-connections on tributaries related to ports being a member of the specified protection group.

Error Code: SNVS - Status, Not in Valid State, tributary is used in cross-connection

**Error responses (MS/Line  
Protection Group)**

**Validation rule: no XC on protection tribs**

There shall exist no cross-connections on protection tributaries related to ports being a member of the specified protection group.

Error code: NVS - Status, Not in Valid State, protection tributary is used in cross-connection

**Related TL1 messages**

- “RTRV-PROTN-GRP: Retrieve protection group” (8-13)
- “ED-PROTN-GRP: Edit protection group” (8-80)
- “ENT-PROTN-GRP: Enter protection group” (8-56)

DLT-PROTN-GRP: Delete protection group

- “DLT-CRS: Delete cross-connection” (7-53)
- “OPR-PROTNSW: Operate protection switch” (8-109)
- “RLS-PROTNSW: Release protection switch” (8-125)



## DLT-PROTN-GRP notification

---

**Output format** The DLT-PROTN-GRP notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: DLT-PROTN-GRP:*aid:prototype*;

### Output parameters

#### Command parameters (1+1 equipment protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

#### Command parameters (multiplex section/line protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

#### Command parameters (2-fibre MS-SPRing/BLSR protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

#### Command parameters (4-fibre MS-SPRing/BLSR protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### Command parameters (Path protection group)

1. aid – Access Identifier  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. prototype – Protection Type  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

### Example output

#### 1+1 Equipment protection group

The following example reports the deletion of an 1+1 equipment protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:DLT-PROTN-GRP:1-1-
  estgrp:EQPTSWFBR"
;
```

#### Multiplex section/line protection group (1+1)

The following example reports the deletion of an 1+1 multiplex section/line protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:DLT-PROTN-GRP:1-1-
  o001:1+1"
;
```

#### 2 fibre MS-SPRing/BLSR protection group

The following example reports the deletion of an 2F MS-SPRing/BLSR protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:DLT-PROTN-GRP:1-1-t001:2F"
;
```

#### 4 fibre MS-SPRing/BLSR protection group

The following example reports the deletion of an 4F MS-SPRing/BLSR protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:DLT-PROTN-GRP:1-1-f001:4F"
;
```

### **Path protection group**

The following example reports the deletion of a path protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:DLT-PROTN-GRP:1-1-#-#-10-1
-25:PATHDRI"
;
```





## OPR-PROTNSW: Operate protection switch

---

The OPR-PROTNSW command allows to switch one or more existing protection group instances of any protection group type. Different identification methods are supported for the different protection types.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1  
Abortable: No

### Input format

#### 1+1 equipment group

Command Syntax: OPR-PROTNSW:*tid:aid:ctag::prototype:spec\_block*;

#### Multiplex section/line protection group

Command Syntax: OPR-PROTNSW:*tid:aid:ctag::prototype:spec\_block*;

#### 2-/4-fibre MS-SPRing/BLSR protection group

Command Syntax: OPR-PROTNSW:*tid:[aid]:ctag::prototype,[rid]:spec\_block*;

#### Path protection group

Command Syntax: OPR-PROTNSW:*tid:[aid]:ctag::prototype,[ppgname]:spec\_block*;

**Important!** The use of *ppgname* as input parameter with alias function is not yet supported. Address path-protected cross-connections individually via *Navis*<sup>®</sup> Optical EMS/*WaveStar*<sup>®</sup> CIT GUI using their AIDs.

### Input parameters

#### Command parameters (1+1 equipment protection group)

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (multiplex section/line protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a 1+1 multiplex section/line protection group or the aid of a 1:1 multiplex section/line protection group (only R3.0 and later) or an port aid being a member of the group.  
Type: AID  
Range: OnePlusOne\_ProtGrpAID (not ranged) or NByOne\_ProtGrpAID (not ranged) or SPortAID (not ranged).
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (2-/4-fibre MS-SPRing/BLSR protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a MS-SPRing/BLSR protection group or an port aid being a member of the group.  
Option: If *rid* is specified, then *aid* can be omitted.  
Type: AID  
Range: TwoFibre\_ProtGrpAID (not ranged) or FourFibre\_ProtGrpAID (not ranged) or SPortAID (not ranged)
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).

4. **protype** – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. **rid** – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If **aid** is specified, then **rid** can be omitted.

#### **Command parameters (Path protection group)**

1. **tid** – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. **aid** – Access Identifier  
This parameter specifies a path protection group aid or an input tributary aid being a member of the group in combination with **ppgname**.  
Type: AID  
Range: Path\_ProtGrpAID (not ranged) or bay-shelf-#-#-all-all-all (ranged over input STS1NumAID) or STS1NumAID (not ranged) bay-shelf-#-#-all-all-all (ranged over input VCGNumAID) or VCGNumAID (not ranged).  
Option: If ppgname is specified, then **aid** can be omitted or used as an input tributary aid.
3. **protype** – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. **ppgname** – Path protection group Name  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If **aid** is specified, then **ppgname** can be omitted. If an input value is specified for **ppgname** and none is specified for **aid**, then the command operates on all protection groups that have the specified path protection group name. If input values are specified for **aid** and **ppgname** then the command operates on all protection groups that have the specified **aid**, **ppgname** pair. The command will complete successfully if there is no protection group described by **aid**, **ppgname**; i.e. the NE sends a COMPL but no switching will take place.

### **Spec block parameters (1+1 equipment protection group)**

See detailed behavior description w.r.t. allowed switch commands; i.e. allowed value combinations for parameters *dest*, *sc*.

1. *dest* – Destination  
This parameter specifies the destination of the switch command; i.e. which side shall be active in terms of the member role within the protection group after the switch has been executed.  
The following values are supported:
  - WKG: Worker
  - PROTN: ProtectionType: alphanumeric value set  
Range: WKG, PROTN
2. *sc* – Switch Command  
This parameter specifies the switch command to be executed by the protection state machine.  
The following values are supported:
  - FRCD: Forced Switch
  - MAN: Manual Switch.Type: alphanumeric value set  
Range: FRCD, MAN (for switching protection group instance); MAN (for controller protection group instance); FRCD, MAN (for EP155 protection group instance).

### **Spec block parameters ( multiplex section/line protection group)**

See detailed behavior description w.r.t. allowed switch commands; i.e. allowed value combinations for parameters *dest*, *sc*.

1. *dest* – Destination  
This parameter specifies the destination of the switch command; i.e. to which side the switch command shall applied to.

The following values are supported:

- WKG: Worker
- PROTN: Protection

The parameter will not be taken into consideration, if a LOCKOUT switch command is performed. Details see behaviour description.

Type: alphanumeric value set.

Range: WKG, PROTN.

2. sc – Switch Command

This parameter specifies the switch command to be executed by the protection state machine.

The following values are supported:

- LOCKOUT: Lockout
- FRCD: Forced Switch
- MAN: Manual Switch

Type: alphanumeric value set

Range: LOCKOUT, FRCD, MAN

**Spec block parameters (2-fibre MS-SPRing/BLSR protection group)**

See detailed behavior description w.r.t. allowed switch commands; i.e. allowed value combinations for parameters *dest*, *destside*, *sc*, swtype.

1. dest – Destination

This parameter specifies the destination of the switch command.

The following values are supported: PROTN, Protection.

Type: alphanumeric value set.

Range: PROTN.

2. destside – Destination Side

This parameter specifies the destination side to which the switch command shall be applied; i.e.

- it is EAST for the east ring side
- it is WEST for the west ring side.

Type: alphanumeric value set.

Range: EAST, WEST.

3. sc – Switch Command

This parameter specifies the switch command to be executed by the protection state machine.

The following values are supported:

- LOCKOUT: Lockout
- FRCD: Forced Switch
- MAN: Manual Switch.

Type: alphanumeric value set.

Range: LOCKOUT, FRCD, MAN.

4. swtype – Switch Type

This parameter specifies what type of protection switching is used for the MS-SPRing/BLSR protection group. The value RING is used for loopback switching. The value SPAN can be used in case of span switching.

Type: alphanumeric value set.

Range: RING, SPAN.

**Spec block parameters (4-fibre MS-SPRing/BLSR protection group)**

See detailed behavior description w.r.t. allowed switch commands; i.e. allowed value combinations for parameters *dest*, *destside*, *sc*, swtype.

1. dest – Destination

This parameter specifies the destination of the switch command. The following values are supported: PROTN, Protection.

Type: alphanumeric value set

Range: PROTN

2. destside – Destination Side

This parameter specifies the destination side to which the switch command shall be applied; i.e.

- it is EAST for the east ring side
- it is WEST for the west ring side.

Type: alphanumeric value set.

Range: EAST, WEST.

3. sc – Switch Command

This parameter specifies the switch command to be executed by the protection state machine.

The following values are supported:

- LOCKOUT: Lockout
- FRCD: Forced Switch
- MAN: Manual Switch

Type: alphanumeric value set.

Range: LOCKOUT, FRCD, MAN.

4. swtype – Switch Type

This parameter specifies what type of protection switching is used for the MS-SPRing/BLSR protection group. The value RING shall be used for loopback switching (i.e. service route is looped back onto the protection route in the direction opposite the failure). The value SPAN shall be used in case of span switching (i.e. all traffic being carried on the worker span between an adjacent pair of nodes is switched to the protection span, between the same pair of nodes and on the same side of the ring).

Type: alphanumeric value set.

Range: RING, SPAN.

**Spec block parameters (path protection group)**

See detailed behavior description w.r.t. allowed switch commands; i.e. allowed value combinations for parameters *dest*, *sc*.

1. dest – Destination

This parameter specifies the destination of the switch command; i.e. to which side the switch command is applied to.

The following values are supported:

- WKG: Worker
- PROTN: Protection.

Type: alphanumeric value set.

Range: WKG, PROTN

2. sc – Switch Command

This parameter specifies the switch command to be executed by the protection state machine.

The following values are supported:

- LOCKOUT: Lockout
- FRCD: Forced Switch
- MAN: Manual Switch.

Type: alphanumeric value set.

Range: LOCKOUT, FRCD, MAN.

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output format</b>                 | <p>After receiving the OPR-PROTNSW command, the following normal completion response is returned:</p> <pre>sid date time M ctag COMPLD ;</pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Detailed behavior description</b> | <p>The command switches the identified protection group. The switch command is processed according to the state machine behavior for the different protection group types. As consequence, the values of the following attributes of the state machine may be updated:</p> <p>EQPTSWFBR: <i>actunit, swreq</i></p> <p>EQPTCTL: <i>actunit, swreq</i></p> <p>EQPTEP155: <i>actunit, swreq</i></p> <p>1+1/1:1: <i>actunit, swreq</i></p> <p>2F: <i>eswreq, wswreq</i></p> <p>4F: <i>eactunit, eswreq, wactunit, wswreq,</i></p> <p>PATHDRI: <i>actunit, actunitaid, swreq</i></p> <p>The update of the attributes is reported by means of a protection switch notification for the corresponding protection group type.</p> <p><b>Identification of path protection groups</b></p> <p>A set of path protection groups is identified by a path protection group name (<i>ppgname</i>). If an input tributary AID (<i>aid</i>) is specified in addition to the <i>ppgname</i>, then the command operates on the subset of protection groups that share both of these parameters. Specifying the destination parameter (<i>dest</i>) as WKG (PROTN) causes all members of the <i>aid, ppgname</i> set to switch to working (protection).</p> |



For PATHDRI, the protection switch applies to all constituents of the identified tributary. For this case, the following table summarizes the use of path protection group names as related to OPR-PROTNSW.

| aid                                                         | ppgname  | dest<br>(note 2)   | comment                                                                                         |
|-------------------------------------------------------------|----------|--------------------|-------------------------------------------------------------------------------------------------|
| not used                                                    | ppgname  | WKG<br>or<br>PROTN | operation applies to all tributaries that are group members of the ppgname (note 1)             |
| grp member<br>(input)<br>logical<br>tributary AID           | ppgname  | WKG<br>or<br>PROTN | operation applies to all tributaries that are group members of the aid, ppgname subset (note 1) |
| path prot grp<br>id (output<br>logical<br>tributary<br>AID) | not used | WKG<br>or<br>PROTN | normal, non-aliasing target identification (note 1, note 2)                                     |

Note 1: group members are defined to be the working and protection input logical tributaries of the path protection group.

Note 2: the output logical tributary aid of an adjunct path-protected cross-connection is not a path prot grp id, only the output of a path-protected cross-connection is.

#### Allowed/Supported switch commands for 1+1 Equipment Protection

The following table shows the allowed/supported value combinations for the parameters *sc*, *dest* w.r.t. OPR-PROTNSW for 1+1 equipment protection group.

| sc   | dest  |
|------|-------|
| FRCD | WKG   |
| FRCD | PROTN |
| MAN  | WKG   |
| MAN  | PROTN |

Note 1: please keep in mind, that for the controller protection group instance *sc*=MAN is only applicable.

### Behaviour description for multiplex section/line protection

The destination parameter dest shall not been taken in consideration, if a LOCKOUT command is performed.

This means for the different MSP types:

- 1:1/1+1 : allways the protection side is locked out and the working side carries the traffic. (By this (PROTN) was specified in the tables)
- 1+1 optimized: The actual protection state is frozen. The actual inactive side is locked out. (To make it also consistent to the other MSPs also (PROTN) was specified in the table).

### Allowed/Supported switch commands for 1:1 MSP Protection SDH

The following table shall show the allowed/supported value combinations for the parameters sc, dest, destside, swtype dest w.r.t. OPR-PROTNSW for 1:1 Multiplex Section/Line protection group for SDH mode:

| sc      | dest    |
|---------|---------|
| FRCD    | WKG     |
| FRCD    | PROTN   |
| MAN     | PROTN   |
| LOCKOUT | (PROTN) |

### Allowed/Supported switch commands for 1+1 MSP Protection

The following table shall show the allowed/supported value combinations for the parameters sc, dest w.r.t. OPR-PROTNSW for 1+1 Multiplex Section/Line protection group:

| sc      | dest    |
|---------|---------|
| FRCD    | WKG     |
| FRCD    | PROTN   |
| MAN     | WKG     |
| MAN     | PROTN   |
| LOCKOUT | (PROTN) |

### Allowed/Supported switch commands for 1+1 Optimized MSP

The following table shall show the allowed/supported value combinations for the parameters *sc*, *dest* w.r.t. OPR-PROTNSW for 1+1 optimized Multiplex Section protection group:

| <b>sc</b> | <b>dest</b> |
|-----------|-------------|
| FRCD      | WKG         |
| FRCD      | PROTN       |
| LOCKOUT   | (PROTN)     |

#### **Allowed/Supported switch commands for 2-fibre MS-SPRing/BLSR**

The following table shows the allowed/supported value combinations for the parameters *sc*, *dest*, *destside*, *swtype* w.r.t. OPR-PROTNSW for 2-fibre MS-SPRing/BLSR protection groups.

| <b>Case</b> | <b>sc</b> | <b>dest</b>          | <b>destside</b> | <b>swtype</b> |
|-------------|-----------|----------------------|-----------------|---------------|
| LP-S        | LOCKOUT   | PROTN                | EAST or WEST    | SPAN          |
| FS-R        | FRCD      | not used/<br>omitted | EAST or WEST    | RING          |
| MS-R        | MAN       | not used/<br>omitted | EAST or WEST    | RING          |

#### **Allowed/Supported switch commands for 4-fibre MS-SPRing/BLSR**

The following table shall show the allowed/supported value combinations for the parameters *sc*, *dest*, *destside*, *swtype* w.r.t. OPR-PROTNSW for 4-fibre MS-SPRing/BLSR protection groups.

| <b>Case</b> | <b>sc</b> | <b>dest</b>          | <b>destside</b> | <b>swtype</b> |
|-------------|-----------|----------------------|-----------------|---------------|
| LP-S        | LOCKOUT   | PROTN                | EAST or WEST    | SPAN          |
| FS-R        | FRCD      | not used/<br>omitted | EAST or WEST    | RING          |
| FS-S        | FRCD      | not used/<br>omitted | EAST or WEST    | SPAN          |

| Case | sc  | dest                 | destside        | swtype |
|------|-----|----------------------|-----------------|--------|
| MS-R | MAN | not used/<br>omitted | EAST or<br>WEST | RING   |
| MS-S | MAN | not used/<br>omitted | EAST or<br>WEST | SPAN   |

### Allowed/Supported switch commands for path protection group

The following table shows the allowed/supported value combinations for the parameters *sc*, *dest* w.r.t. OPR-PROTNSW for path protection groups.

Dependency of allowed/supported switch request were simplified in order to:

- comply with new GR-1400 (01/99)
- harmonize with 1+1 Multiplex section/Line protection group.

| sc      | dest  |
|---------|-------|
| LOCKOUT | PROTN |
| FRCD    | WKG   |
| FRCD    | PROTN |
| MAN     | WKG   |
| MAN     | PROTN |

### Example input/output

#### 1+1 Equipment protection group

The following example shows an successful 'manual switch to protection' command for a 1+1 equipment protection group:

```
OPR-PROTNSW:LT-UNITE:1-1-estgrp:123456::EQPTSWFBR:  
sc=MAN,dest=PROTN;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

#### Multiplex section/line protection group 1+1

The following example shows an successful 'forced switch to worker' command for a 1+1 multiplex section/line protection group:

```
OPR-PROTNSW:LT-UNITE:1-1-o001:123456::1+1:sc=FRCD,
```

```
dest=WKG;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### **Multiplex section/line protection group 1:1 (SDH)**

The following example shows an successful 'manual switch to protection' command for a 1:1 multiplex section/line protection group:

```
OPR-PROTNSW:LT-UNITE:1-1-o001:123456::1xNOPT:sc=MAN,  
dest=PROTN;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### **Multiplex section/line protection group 1:1 optimized**

The following example shows an successful lockout command for a 1+1 optimized multiplex section/line protection group: Please keep in mind, that the *dest* parameter is not taken in consideration:

```
OPR-PROTNSW:LT-UNITE:1-1-o001:123456::1+1:sc=LOCKOUT,  
dest=PROTN;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### **2 fibre MS-SPRing/BLSR protection group**

The following example shows an successful 'manual ring switch' command for the east side of a 2F MS-SPRing/BLSR protection group:

```
OPR-PROTNSW:LT-UNITE:1-1-t001:123456::2F:sc=MAN,  
swtype=RING,destside=EAST;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### **4 fibre MS-SPRing/BLSR protection group**

The following example shows an successful 'manual span switch' command for the west side of a 4F MS-SPRing/BLSR protection group:

```
OPR-PROTNSW:LT-UNITE:1-1-f001:123456::4F:sc=MAN,  
swtype=SPAN,destside=WEST;
```

```
LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

### Path protection group

The following example shows an successful 'lockout of protection' command for a path protection group:

```
OPR-PROTNSW:LT-UNITE:1-1-#-#-10-1-25:123456::PATHDRI:
sc=LOCKOUT,dest=PROTN;
LT-UNITE 98-01-01 08:00:00
M 123456 COMPLD
;
```

## Error responses (general)

### Validation rule: complete switch command

The switch command (combination of *sc*, *dest*, *destside*, *sctype*) shall be complete; i.e. all needed parameters shall be present.

Error code: IDNV - Input, Data Not Valid, incomplete switch command

### Validation rule: supported switch command

The switch command (combination of *sc*, *dest*, *destside*, *sctype*) shall be supported by the specified protection group type.

Error code: IDNV - Input, Data Not Valid, invalid switch command

### Validation rule: allowed switch command in that state

The specified switch command shall be allowed in the actual protection state.

Error code: SNVS - Status, Not in Valid State, switch command not allowed for actual protection state.

### Validation rule: consistent aid and prototype

The specified *aid* shall be consistent with the specified *prototype*.

Error code: IDNV - Input, Data Not Valid, inconsistent aid and prototype

**Error responses (1+1  
Equipment protection  
group)**

**Validation rule: clock not in warming-up status (Switching Protection Group)**

The clock of the destination as requested in the manual switch command shall not be in the 'warming-up' state.

Error code: SNVS - Status, Not in Valid State, clock of destination XC is in warming-up state

**Error responses (MS/Line  
protection group)**

**Validation rule: succeeding switch command**

The switch command is executed by the protection state machine running on the XC pack.

Error code: SPFA - Status, Protection unit FAiled

**Validation rule: MSP type 1:1 does not allow manual switch requests to worker**

The system shall reject an OPR command to select the worker port as active port (actunit=WKR) if the current protection architecture is 1:1 (protype = 1x1). This applies only to manual switch requests.

Error code: SNVS - Status, Not in Valid State, Manual Switch to Worker for Protection Type 1x1 not allowed

**Validation rule: MSP type 1+1\_optimized does not allow manual switch commands**

The system shall reject an OPR command for manual switch requests if the operation is 'optimized'.

Error code: SNVS - Status, Not in Valid State, Manual Switch for Protection Type 1+1\_Optimized not allowed

**Error responses (2-/4-fibre  
MS-SPRing/BLSR  
protection group)**

**Validation rule: consistent *aid* and *rid***

If both an aid and an rid are specified as input parameters and they are inconsistent, then the following error response is returned

Error code: IDNV - Input, Data Not Valid, inconsistent aid and rid

**Validation rule: succeeding switch command**

The switch command shall be executed by the protection state machine running on the XC pack.

Error code: SPFA - Status, Protection unit FAiled

**Validation rule: APS switch time constraint**

The switch command shall be executed by the protection state machine using the APS within time constraints

Error code: SPFA - Status, Protection unit FAiled, APS did not succeed.

**Error responses (Path protection group)**

**Validation rule: succeeding switch command**

The switch command shall be executed by the protection state machine running on the XC pack.

Error code: SPFA - Status, Protection unit FAiled

**Related TL1 messages**

- “RTRV-PROTN-GRP: Retrieve protection group” (8-13)
- “ED-PROTN-GRP: Edit protection group” (8-80)
- “ENT-PROTN-GRP: Enter protection group” (8-56)
- “ENT-CRS: Enter cross-connection” (7-25)
- “RLS-PROTNSW: Release protection switch” (8-125).





## RLS-PROTNSW: Release protection switch

---

The RLS-PROTNSW command allows to clear protection switch requests for one or more existing protection group instances of any protection group type. Different identification methods are supported for the different protection types.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1  
Abortable: No

### Input format

#### 1+1 equipment group

Command Syntax: RLS-PROTNSW:*tid:aid:ctag::prototype:spec\_block*;

#### Multiplex section/line protection group

Command Syntax: RLS-PROTNSW:*tid:aid:ctag::prototype:spec\_block*;

#### 2-/4-fibre MS-SPRing/BLSR protection group

Command Syntax: RLS-PROTNSW:*tid:[aid]:ctag::prototype,[rid]:spec\_block*;

#### Path protection group

Command Syntax: RLS-PROTNSW:*tid:[aid]:ctag::prototype,[ppgname]:spec\_block*;

**Important!** The use of *ppgname* as input parameter with alias function is not yet supported. Address path-protected cross-connections individually via *Navis*<sup>®</sup> Optical EMS/*WaveStar*<sup>®</sup> CIT GUI using their AIDs.

### Input parameters

#### Command parameters (1+1 equipment protection group)

1. *tid* – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (multiplex section/line protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a 1+1 multiplex section/line protection group or the aid of a 1:1 multiplex section/line protection group (only R3.0 and later) or an port aid being a member of the group.  
Type: AID.  
Range: OnePlusOne\_ProtGrpAID (not ranged) or SPortAID NByOne\_ProtGrpAID (not ranged) or SPortAID (not ranged).
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. prototype – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

**Command parameters (2-/4-fibre MS-SPRing/BLSR protection group)**

1. tid – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. aid – Access Identifier  
This parameter specifies the aid of a MS-SPRing/BLSR protection group or an port aid being a member of the group.  
Option: If *rid* is specified, then *aid* can be omitted.  
Type: AID.  
Range: TwoFibre\_ProtGrpAID (not ranged) or FourFibre\_ProtGrpAID (not ranged) or SPortAID (not ranged)
3. ctag – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).

4. *prototype* – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
5. *rid* – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If *aid* is specified, then *rid* can be omitted.

#### **Command parameters (Path protection group)**

1. *tid* – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
See definition in input parameters section in “OPR-PROTNSW: Operate protection switch” (8-109).
3. *prototype* – Protection Type  
See definition in input parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
4. *ppgname* – Path protection group Name  
Option: If *aid* is specified, then *ppgname* can be omitted. If an input value is specified for *ppgname* and none is specified for *aid*, then the command operates on all protection groups that have the specified path protection group name. If input values are specified for *aid* and *ppgname* then the command operates on all protection groups that have the specified *aid*, *ppgname* pair.  
The command will complete successfully if there is no protection group described by *aid*, *ppgname*.

#### **Spec block parameters (1+1 Equipment, multiplex section/line, Path protection group)**

1. *sc* – Switch Command  
This parameter specifies the clear command to be executed by the protection state machine.  
Type: alphanumeric value set  
Range: CLEAR  
Option: If the parameter is omitted the default switch command will be executed.

#### **Spec block parameters (2/4-fibre MS-SPRing/BLSR protection group)**

1. *destside* – Destination Side

This parameter specifies the destination side to which the switch command shall be applied; i.e.

- it is EAST for the east ring side
- it is WEST for the west ring side

Type: alphanumeric value set

Range: EAST, WEST

2. sc – Switch Command

This parameter specifies the clear command to be executed by the protection state machine.

Type: alphanumeric value set

Range: CLEAR

Option: If the parameter is omitted the default switch command will be executed.

**Output format** After receiving the RLS-PROTNSW command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

**Detailed behavior description**

The command clears the protection switch of the identified protection groups. The clear command is processed according to the state machine behavior for the different protection group types. As consequence, the values of the following attributes of the state machine may be updated:

EQPTSWFBR: *actunit*, *swreq*

EQPTCTL: *swreq*

EQPTEP155: *actunit*, *swreq*

1+1/1:1: *actunit*, *swreq*

2F: *eswreq*, *wswreq*

4F: *eactunit*, *eswreq*, *wactunit*, *wswreq*,

PATHDRI: *actunit*, *actunitaid*, *swreq*

The update of the attributes is reported by means of a protection switch notification for the corresponding protection group type.

### Identification of path protection groups

A set of path protection groups is identified by a path protection group name (*ppgname*). If an input tributary AID (*aid*) is specified in addition to the *ppgname*, then the command operates on the subset of protection groups that share both of these parameters.

For PATHDRI, the protection switch applies to all constituents of the identified tributary. For this case, the following table summarizes the use of path protection group names as related to RLS-PROTNSW.

| aid                                                | ppgname  | comment                                                                                |
|----------------------------------------------------|----------|----------------------------------------------------------------------------------------|
| not used                                           | ppgname  | operation applies to all tributaries that are group members of the ppgname (note 1)    |
| grp member (input)<br>logical tributary AID        | ppgname  | operation applies to all tributaries that are group members of the aid, ppgname subset |
| path prot grp id<br>(output logical tributary AID) | not used | normal, non-aliasing target identification                                             |

Note 1: group members are defined to be the working and protection input logical tributaries of the path protection group.

### Example input/output

#### 1+1 Equipment Protection Group

The following example shows an successful clear command for a 1+1 equipment protection group:

```
RLS-PROTNSW:LT-UNITE:1-1-estgrp:123456::EQPTSWFBR;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

RLS-PROTNSW: Release protection switch

### Multiplex section/line protection group (1+1)

The following example shows an successful clear command for a 1+1 multiplex section/line protection group:

```
RLS-PROTNSW:LT-UNITE:1-1-o110:123456::1+1;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### 2 fibre MS-SPRing/BLSR protection group

The following example shows an successful 'clear' command for the east side of a 2F MS-SPRing/BLSR protection group:

```
RLS-PROTNSW:LT-UNITE:1-1-t001:123456::2F:sc=CLEAR,  
destdside=EAST;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### 4 fibre MS-SPRing/BLSR protection group

The following example shows an successful 'clear' command for the west side of a 4F MS-SPRing/BLSR protection group:

```
RLS-PROTNSW:LT-UNITE:1-1-f001:123456::4F:sc=CLEAR,  
destdside=WEST;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

### Path protection group

The following example shows an successful clear command for a path protection group:

```
RLS-PROTNSW:LT-UNITE:1-1-#-#-10-1-25:123456::PATHDRI;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

## Error responses (general)

### Validation rule: consistent *aid* and *prototype*

The specified *aid* shall be consistent with the specified *prototype*.

Error code: IDNV - Input, Data Not Valid, inconsistent aid and prototype

**Error responses (multiplex section/line protection group)**

**Validation rule: succeeding switch command**

The switch command shall be executed by the protection state machine running on the XC pack.

Error code: SPFA Status, Protection unit Failed

**Error responses (2-/4-fibre MS-SPRing/BLSR protection group)**

**Validation rule: consistent aid and rid**

If both an aid and an rid are specified as input parameters and they are inconsistent, then the following error response is returned

Error code: IDNV - Input, Data Not Valid, inconsistent aid and rid

**Validation rule: succeeding switch command**

The switch command shall be executed by the protection state machine running on the XC pack.

Error code: SPFA - Status, Protection unit Failed

**Error responses (Path protection group)**

**Validation rule: succeeding switch command**

The switch command shall be executed by the protection state machine running on the XC pack.

Error code: SPFA - Status, Protection unit Failed

**Related TL1 messages**

- “RTRV-PROTN-GRP: Retrieve protection group” (8-13)
- “ED-PROTN-GRP: Edit protection group” (8-80)

RLS-PROTNSW: Release protection switch

- “ENT-PROTN-GRP: Enter protection group” (8-56)
- “ENT-CRS: Enter cross-connection” (7-25)
- “OPR-PROTNSW: Operate protection switch” (8-109)





## REPT SW: Report switch

---

REPT SW messages are generated autonomously to report equipment protection switches of a duplex equipment unit pair. These equipment pairs are referred to as 1+1 equipment protection groups. The message indicates the equipment/circuit pack that was placed in the active state.

**Output format** The general format of a REPT SW message is as follows:

```

tid date time
A atag REPT SW
  "actid,stbyid"
;
```

### Output parameters

#### Command parameters

1. atag – AutomaticTag  
This parameter specifies the message sequence number. The number is incremented by one for each autonomous message generated by the NE. Leading zeros are not suppressed.  
Type: numeric string  
Range: 000 .. 999
2. actid – Active Identifier  
This parameter specifies the circuit pack AID which is active within the 1+1 equipment protection group.  
Type: AID  
Range: CpAID
3. stbyid - Standby Identifier  
This parameter specifies the circuit pack AID which is standby (non-active) within the 1+1 equipment protection group.  
Type: AID  
Range: CpAID

**Example input/output** The following example shows a switch report (with *stbyid* parameter):

```

LT-UNITE 99-01-10 08:12:00
A 001 REPT SW
  "1-1-#-#-xcp-cp,1-1-#-#-xcw-cp"
```

Protection group  
REPT SW: Report switch

*TL1 messages - protection*

;

### **Related TL1 messages**

- “RTRV-PROTN-GRP: Retrieve protection group” (8-13)
- “OPR-PROTNSW: Operate protection switch” (8-109)
- “RLS-PROTNSW: Release protection switch” (8-125)

**References** GR-833-CORE



## Protection switch notification

---

### Output format

#### General

The protection switch notification shall use the general format of a REPT EVT notification.

The protection switch notification shall use the general format of a REPT SW notification for reporting of state changes for actunit attribute changes for 1+1 equipment protection group.

The following syntax is used for: 1+1 equipment, 1+1 multiplex section/line, 1:1 multiplex section/line, 2-/4-fibre MS-SPRing/BLSR, path protection group.

Command Syntax: REPT EVT *modifier*  
*aid:condtype,condeff,ocrdat,ocrtm:conddescr;*

#### 1+1 equipment protection group

The following syntax is used in addition to REPT EVT for 1+1 equipment protection group.

Command Syntax: REPT SW *actid, stbyid;*

REPT SW is generated if the *actunit* (active unit state) attribute is changed due to an automatic switch or a switch command. REPT EVT is generated if *swreq* (switch request state) attribute is changed due to an automatic switch or a switch command.

Note: If *actunit* and *swreq* is changed due to an automatic switch or a switch command, one REPT SW and one REPT EVT is generated.

### Output parameters

#### Command parameters (1+1 equipment protection group, REPT EVT)

1. *modifier* – Modifier  
This parameter specifies the value 'COM' as an event that applies to the whole NE.  
Type: alphanumeric value set.  
Range: COM.
2. *aid* – Access Identifier  
See definition in output parameters section "RTRV-PROTN-GRP: Retrieve protection group" (8-13).

3. condtype – Condition Type  
This parameter specifies/identifies the type of event indication being reported. The value GP (General Purpose) is used for all 1+1 equipment protection switch events.  
Type: alphanumeric value set.  
Range: GP.
4. condeff – Condition Effect  
This parameter indicates the effect of the reported event on the NE. The value TC – (Transient Condition) is used for all protection switch events.  
Type: alphanumeric value set.  
Range: TC.
5. ocrdat – Occurrence Date  
This parameter indicates the date of the switch event being reported.  
Type: value set of format MM-DD.  
Range: M, D are digits. Leading zeros are not suppressed. MM represents month, DD the day.
6. ocrtm – Occurrence Time  
This parameter indicates the time of the switch event being reported.  
Type: value set of format HH-MM-SS.  
Range: H, M, S are digits. Leading zeros are not suppressed. HH represents hours, MM minutes, SS seconds.
7. conddescr – Condition Description  
This parameter provides additional information w.r.t. the protection event.  
The string value depends on the actual switch request state as follows
  - *swreq: conddescr*
  - EQPTFAILED: \"Protection switch, EQPT, Equipment failed\"
  - FS: \"Protection switch, EQPT, Forced switch\"
  - MS: \"Protection switch, EQPT, Manual switch\"
  - NR: \"Protection switch, EQPT, No request\"Type: inner string.  
Range: See above. Note: For protection type EQPTCTL swreq=FS or conddescr =\"Protection switch, EQPT, Forced switch\" is not applicable.

Initial PROTNSW:

The system evaluates the current fault information at the protection group creation time. Based on that, the system calculates and reports the switch request state. The value will be either 'NR' or 'EQPTFAILED' .

**Command parameters (1+1 equipment protection group, REPT SW)**

1. actid – Active Unit AID  
This parameter specifies the circuit pack AID of the newly selected/active unit within the protection group.  
Type: AID.  
Range: circuit pack AID.  
Initial PROTNSW.  
The system evaluates the current fault information and the current active unit at the protection group creation time. Based on that, the system calculates and reports the selected active unit.
2. stbyid – Standby Unit AID  
This parameter specifies the circuit pack AID of the standby unit within the protection group.  
Type: AID.  
Range: circuit pack AID.  
Initial PROTNSW.  
The system evaluates the current fault information and the current active unit at the protection group creation time. Based on that, the system calculates and reports the standby unit.

**Command parameters (multiplex section/line protection group, REPT EVT)**

1. modifier – Modifier  
See definition of parameter *pgrate* “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. aid – Access Identifier  
This parameter specifies the port AID being a member of the protection group.

It is derived from the active unit state as follows:

- a. current value of **actunit**, **aid** value
- b. WKG, worker port aid
- c. PROTN, protection port aid

Type: AID

Range: SPortAID

Initial PROTNSW:

The worker port AID is used in the initial protection switch notification.

3. condtype – Condition Type

This parameter identifies the type of event indication being reported. The value GP (General Purpose) is used independent for the operation mode if the active unit state has not changed. If active unit state has changed and operation mode is revertive, the following values is used: The value WKSWPR-2 is used if service is switched to the protection section/line. The value WKSWBK is used if service is switched to the worker section/line.

If active unit has changed and operation mode is non-revertive, the value PS is used.

Type: alphanumeric value set.

Range: GP, WKSWPR-2, WKSWBK, PS

Initial PROTNSW:

The value 'GP' is used in the initial protection switch notification.

4. condeff – Condition Effect

See definition of "REPT EVT: Report event" (6-47).

5. ocrdat – Occurrence Date

See definition of "REPT EVT: Report event" (6-47).

6. ocrtm – Occurrence Time

See definition of "REPT EVT: Report event" (6-47).

7. conddescr – Condition Description

This parameter provides additional information w.r.t. the protection event. The string value depends on the actual switch request state as follows:

- **swreq: conddescr**
- LO: \"Protection switch, {rr} port, Lockout switch,, 1+1/1:1\"

- FS: \”Protection switch, {rr} port, Forced switch,, 1+1/1:1\”
- FOP: \”Protection switch, {rr} port, FOP,, 1+1/1:1\”
- SF: \”Protection switch, {rr} port, SF,, 1+1/1:1\”
- SD: \”Protection switch, {rr} port, SD,, 1+1/1:1\”
- MS: \”Protection switch, {rr} port, Manual switch,, 1+1/1:1\”
- WTR: \”Protection switch, {rr} port, WTR,, 1+1/1:1\”
- DNR: \”Protection switch, {rr} port, DNR,, 1+1/1:1\”
- NR: \”Protection switch, {rr} port, No request,, 1+1/1:1\”

The value for variable *rr* is derived from the port rate within the protection group.

See value range definition for the attribute *pgrate* in the “RTRV-PROTN-GRP: Retrieve protection group” (8-13) output section w.r.t. supported port rates for the different protection types.

Type: inner string.

Range: See description above.

Initial PROTNSW:

The value 'NR' is used for *swreq* in the initial protection switch notification.

### Command parameters (2-fibre MS-SPRing/BLSR protection group, REPT EVT)

Protection switch events are reported separately for each side within the protection group. The *aid* parameter can be used in order to identify the side for which the switch event is reported.

1. modifier – Modifier

See definition of parameter *pgrate* in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).

2. aid – Access Identifier

This parameter specifies for which ring side the corresponding switch request is active; it shall either specify the east port AID or the west port AID within the protection group.

Type: AID.

Range: SPortAID.

3. condtype – Condition Type  
This parameter identifies the type of event indication being reported. The value WKSWPR-2 is used if service is switched to the protection route. The value WKSWBK is used if service is switched to the worker route. The value GP (General Purpose) is used if the active route has not changed.  
Type: alphanumeric value set.  
Range: GP, WKSWPR-2, WKSWBK  
Initial PROTNWSW: The value **WKSWBK** is used in the initial protection switch notification.
4. condeff – Condition Effect  
See definition of “REPT EVT: Report event” (6-47).
5. ocrdat – Occurrence Date  
See definition of “REPT EVT: Report event” (6-47).
6. ocrtm – Occurrence Time  
See definition of “REPT EVT: Report event” (6-47).
7. conddescr – Condition Description  
This parameter provides additional information w.r.t. the protection event. The string value depends on the actual swreq as follows:
  - **swreq: conddescr**
  - LPS: \”Protection switch, {rr} port, Lockout switch, LPS, 2F”\
  - FSR: \”Protection switch, {rr} port, Forced switch, FSR, 2F”\
  - SFR: \”Protection switch, {rr} port, Signal fail, SFR, 2F”\
  - SDR: \”Protection switch, {rr} port, Signal degrade, SDR, 2F”\
  - MSR: \”Protection switch, {rr} port, Manual switch, MSR, 2F”\
  - WTR: \”Protection switch, {rr} port, Wait to restore, WTR, 2F”\
  - RRS: \”Protection switch, {rr} port, Reverse request, RRS, 2F”\



- RRR: \"Protection switch, {rr} port, Reverse request, RRR, 2F\"
- NR: \"Protection switch, {rr} port, No request, NR, 2F\"

The value for variable *rr* is derived from the port rate within the protection group. See value range definition for the attribute *pgrate* in the “RTRV-PROTN-GRP: Retrieve protection group” (8-13) output section w.r.t. supported port rates for the different protection types.

Type: inner string

Range: See description above.

Initial PROTN SW: The value 'NR' is used for *swreq* in the initial protection switch notification.

### Command parameters (4-fibre MS-SPRing/BLSR protection group, REPT EVT)

Protection switch events are reported separately for each side within the protection group. The aid parameter can be used in order to identify the side for which the switch event is reported.

1. modifier – Modifier  
See definition of parameter *pgrate* in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. aid – Access Identifier  
This parameter specifies the port AID being a member of the protection group.  
It is derived from the active unit state for each side (east or west) as follows:
  - a. current value of *actunit*, *aid* value
  - b. WKG, worker port aid
  - c. PROTN, protection port aid  
The attributes switch request state and active unite state may be updated in the context of a switch event. Actual means the value of the parameter after the switch has occurred.  
Type: AID.  
Range: SPortAID.  
Initial PROTN SW: The worker port AID is used in the initial protection switch notification.

3. condtype – Condition Type  
This parameter identifies the type of event indication being reported. The value WKSWPR-ep is used if service is switched to east protection span.  
The value WKSWBK-wp is used if service is switched to west protection span. The value WKSWBK shall be used if service is switched to working. The value GP (General Purpose) shall be used if the active route/span has not changed.  
Type: alphanumeric value set.  
Range: GP, WKSWPR-ep, WKSWPR-wp, WKSWBK  
Initial PROTNSW: The value **WKSWBK** is used in the initial protection switch notification.
4. condeff – Condition Effect  
See definition of “REPT EVT: Report event” (6-47).
5. ocrdat – Occurrence Date  
See definition of “REPT EVT: Report event” (6-47).
6. ocrtm – Occurrence Time  
See definition of “REPT EVT: Report event” (6-47).
7. conddescr – Condition Description  
This parameter provides additional information w.r.t. the protection event. The string value depends on the actual swreq as follows:
  - *swreq: condescr*
  - LPS: \”Protection switch, {rr} port, Lockout switch, LPS, 4F”\
  - FSS: \”Protection switch, {rr} port, Forced switch, FSS, 4F”\
  - FSR: \”Protection switch, {rr} port, Forced switch, FSR, 4F”\
  - SFS: \”Protection switch, {rr} port, Signal fail, SFS, 4F”\
  - SFR: \”Protection switch, {rr} port, Signal fail, SFR, 4F”\
  - SDS: \”Protection switch, {rr} port, Signal degrade SDS, 4F”\
  - SDR: \”Protection switch, {rr} port, Signal degrade, SDR, 4F”\
  - MSS: \”Protection switch, {rr} port, Manual switch, MSS, 4F”\

- MSR: \”Protection switch, {rr} port, Manual switch, MSR, 4F”\
- WTR: \”Protection switch, {rr} port, Wait to restore, WTR, 4F”\
- RRS: \”Protection switch, {rr} port, Reverse request, RRS, 4F”\
- RRR: \”Protection switch, {rr} port, Reverse request, RRR, 4F”\
- NR: \”Protection switch, {rr} port, No request, NR, 4F”\

The value for variable *rr* is derived from the port rate within the protection group.

See value range definition for the attribute *pgrate* in the “RTRV-PROTN-GRP: Retrieve protection group” (8-13) output section w.r.t. supported port rates for the different protection types.

Type: inner string.

Range: See Description.

Initial PROTNSW: The value 'NR' is used for *swreq* in the initial protection switch notification.

### Command parameters (Path protection group, REPT EVT)

1. modifier – Modifier  
See definition of parameter *cst* in output parameters section in “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
2. aid – Access Identifier  
This parameter specifies for the output tributary AID of the constituent path selector AID being a member of the path protection group.  
Note: If path protection group consists only of one constituent path selector, the output tributary AID is equal to the path protection group AID.  
Type: AID.  
Range: GenTribAID.
3. condtype – Condition Type  
This parameter specifies the type of event indication being reported. The value GP (General Purpose) is used if the active unit state has not changed.  
If active unit state has changed, the following values are used:  
The value WKSWPR-2 is used if service is switched to the protection tributary. The value WKSWBK is used if service is

switched to the worker tributary.

Type: alphanumeric value set.

Range: GP, WKSWPR-2, WKSWBK.

Initial PROTNW: The value 'GP' is used in the initial protection switch notification.

4. condeff – Condition Effect

See definition of “REPT EVT: Report event” (6-47).

5. ocrdat – Occurrence Date

See definition of “REPT EVT: Report event” (6-47).

6. ocrtm – Occurrence Time

See definition of “REPT EVT: Report event” (6-47).

7. conddescr – Condition Description

This parameter provides additional information w.r.t. the protection event. The string value depends on the actual switch request state as follows:

- *swreq: conddescr*
- LO: \”Protection switch, {rr} CS, Lockout switch”\
- FS: \”Protection switch, {rr} CS, Forced switch”\
- SF: \”Protection switch, {rr} CS, SF”\
- SD: \”Protection switch, {rr} CS, SD”\
- MS: \”Protection switch, {rr} CS, Manual switch”\
- WTR: \”Protection switch, {rr} CS, WTR”\
- NR: \”Protection switch, {rr} CS, No request”\

The value for variable *rr* is derived from the constituent signal type; i.e. it has the following values: STS1, STS3C, STS12C, STS48C, STS192C, VC3, VC4, VC44C, VC416C, VC464C.

Type: inner string.

Range: See description above.

Initial PROTNW: The value 'NR' is used for *swreq* in the initial protection switch notification.

## Example output

### 1+1 Equipment protection group

The following example reports a manual switch to protection circuit pack for 1+1 equipment protection group:

```
LT-UNITE 99-01-10 08:12:00
```

```
A 001 REPT SW
    "1-1-#-#-xcp-cp,1-1-#-#-xcw-cp"
;
    LT-UNITE 98-01-10 08:12:00
A 002 REPT EVT COM
    "1-1-estgrp:GP,TC,01-10,08-12-00:\Protection Switch,
    EQPT, Manual switch\\""
;
```

### **Multiplex section/line protection group (1+1 and 1:1)**

The following example reports a lockout switch for a 1+1 multiplex section/line protection group:

```
    LT-UNITE 98-01-10 08:12:00
A 015 REPT EVT OC3
    "1-1-#-#-10-2:WKSWBK,TC,01-10,08-12-00:\Protection
    Switch, OC3 port, Lockout switch,, 1+1/1x1\\""
;
```

### **2 fibre MS-SPRing/BLSR protection group**

The following example reports a manual ring switch of the east side for a 2F MS-SPRing/BLSR protection group:

```
    LT-UNITE 98-01-10 08:12:00
A 015 REPT EVT OC48
    "1-1-#-#-10-2:WKSWPR-2,TC,01-10,08-12-00:\Protection
    Switch, OC48 port, Manual switch, MSR, 2F\\""
;
```

### **4 fibre MS-SPRing/BLSR protection group**

The following example reports a manual span switch of the east side for a 4F MS-SPRing/BLSR protection group:

```
    LT-UNITE 98-01-10 08:12:00
A 015 REPT EVT OC192
    "1-1-#-#-10-1:WKSWPR-2,TC,01-10,08-12-00:\Protection
    Switch, OC192 port, Manual switch, MSS, 4F\\""
;
```

### **Path protection group**

The following example reports a autonomous switch to protection for a 1+1 path protection group:

```
    LT-UNITE 98-01-10 08:12:00
```

```
A 015 REPT EVT STS1
  "1-1-#-#-10-1-25:WKS WPR-2,TC,01-10,08-12-00:
  \"Protection Switch, STS1 CS, SF\"";
```



## Autonomous notifications

---

### **1+1 equipment protection group**

If the second switch circuit pack is auto created, the 1+1 switch equipment protection group entity shall be created. This entity creation shall be reported by means of ENT-PROTN-GRP notification.

#### **Auto creation of the second switch circuit pack**

If the second switch circuit pack is auto created, the 1+1 switch equipment protection group entity is created. This shall be reported by means of ENT-PROTN-GRP notification for 1+1 equipment protection group. The initial protection state shall be reported by means of a protection switch notification for the 1+1 equipment protection group.

#### **Protection switch**

A protection switch notification (i.e. protection state change) is triggered by means equipment fail condition change as specified for the corresponding protection state machine.

#### **Deletion of the second switch circuit pack**

If the second switch circuit pack is deleted, the 1+1 switch equipment protection group entity shall be deleted. This entity deletion shall be reported by means of DLT-PROTN-GRP notification.

#### **Deletion of the second controller circuit pack**

If the second switch circuit pack is deleted, the 1+1 switch equipment protection group entity shall be deleted. This entity deletion is reported by means of DLT-PROTN-GRP notification for the 1+1 protection group.

### **Multiplex section/Line protection group**

#### **Protection switch and related events**

A protection switch notification (i.e. protection state change) is triggered by means of

- fault condition change
- wait to restore timer expiry
- switch command received via APS message as specified for the corresponding protection state machine.

A protection switch notification shall be triggered upon a change of the Secondary Section Identifier (spec block parameter 'ssi'). This

applies to MSP 1+1 optimized only. This requirement gives additionally to other requirements a further trigger for the autonomous notification for a MSP protection group. It does not require necessarily a separate notification beside other notifications of the same MSP protection group at the same time.

## **2-/4-fibre MS-SPRing/BLSR protection group**

### **Protection switch**

A protection switch notification (i.e. protection state change) is triggered by means of

- fault condition change
- wait to restore timer expiry
- switch command received via APS message as specified for the corresponding protection state machine.

## **Path protection group**

### **Protection switch**

A protection switch notification (i.e. protection state change) is triggered by means of

- fault condition change
- wait to restore timer expiry as specified for the corresponding protection state machine.





# Protection log

## Overview

---

**Purpose** Each NE stores protection switch events in a protection log. The NE administrates the log autonomously. Therefore only a retrieve operation is defined for log the entity.

**Contents**

|                                                  |                       |
|--------------------------------------------------|-----------------------|
| RTRV-LOG-PROTNSW: Retrieve log protection switch | <a href="#">8-150</a> |
| Autonomous notifications                         | <a href="#">8-156</a> |



## RTRV-LOG-PROTNSW: Retrieve log protection switch

---

The RTRV-LOG-PROTNSW command retrieves the protection switch log. This log gives a complete time-ordered list of switching activity which has occurred at the NE covering all different protection groups, system timing reference, station clock output timing reference and system clock.

The protection switch log is a circular buffer that should hold at least 500 entries.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax:  
RTRV-LOG-PROTNSW:*tid::ctag::[startdate],[starttime],[replytype]*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
3. *startdate* – Start Date  
This parameter specifies a date used as filter criteria in order to determine the set of switch events being returned.  
See description of parameter *replytype* for more precise semantics definition.  
Type: value set of format YY-MM-DD  
Range: Y, M, D are digits. Leading zeros are not suppressed. YY represents the year, MM represents month, DD the day.

4. starttime – Start Time  
This parameter specifies a time used as filter criteria in order to determine the set of switch events being returned.  
See description of parameter *replytype* for more precise semantics definition.  
Type: value set of format HH-MM-SS  
Range: H, M, S are digits. Leading zeros are not suppressed. HH represents hours, MM minutes, SS seconds.
5. replytype – Type of Reply  
This parameter specifies, how the entries in the reply are determined. The value BROWSE is used in case of user browsing. The value DBSYNC is used in case of data synchronization with management system.  
BROWSE semantics: If the requested *startdate* and *starttime* is in the log, those entries with matching timestamp and any subsequent log entries shall be returned. If the requested *startdate* and *starttime* is NOT in the log, the first log entry in the log with a timestamp later than the *startdate* and *starttime* plus subsequent log entries shall be returned.  
DBSYNC semantics: If the requested *startdate* and *starttime* is in the log (i.e. a matching timestamp was found), those entries and any subsequent log entries shall be returned. If the requested *startdate* and *starttime* is NOT in the log (i.e. a no matching timestamp was found), an SNVS error response shall be returned.  
Type: alphanumeric value set.  
Range: BROWSE, DBSYNC.  
Default: BROWSE.

**Output format** The returned log entries are ordered ascending according to their timestamp. After receiving the RTRV-LOG-PROTNSW command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"aid,aidtype:EVT,condtype,condeff,ocrdat,ocrtm
[:\"conddescr\"]"
    <0 or more of the line above>
"aid:SW,,,ocrdat,ocrtm"
    <0 or more of the line above>
    <0 or more repetitions of this entire block>
```

;

The output parameters of the log entry are derived/correspond from/to the parameters in the protection switch notification. The parameter definition will reference to the corresponding parameter in the protection switch notification section. Log entry parameters are not splitted within this section w.r.t. protection type. Therefore the protection type has to be considered in order to look-up the proper definition.

## Output parameters

### Command parameters

1. aid – Access Identifier  
See definition “REPT EVT: Report event” (6-47). “REPT SW: Report switch” (8-133) for the different protection switch notifications.
2. aidtype – Access Identifier Type  
See definition of parameter *modifier* “REPT EVT: Report event” (6-47) for the different protection switch notifications.
3. condtype – Condition Type  
See definition “REPT EVT: Report event” (6-47) for the different protection switch notifications.
4. condeff – Condition Effect  
See definition “REPT EVT: Report event” (6-47).
  - a. orcdate – Occurrence Date  
See definition “REPT EVT: Report event” (6-47), “REPT SW: Report switch” (8-133).
  - b. orctime – Occurrence Time  
See definition “REPT EVT: Report event” (6-47), “REPT SW: Report switch” (8-133).
5. conddescr – Condition Description  
See definition of parameter “REPT EVT: Report event” (6-47) for the different protection switch notifications.

### Detailed behavior description

If both *startdate* and *starttime* are omitted, the entire log is retrieved. Both *startdate* and *starttime* must be specified, or both must be omitted. If *replytype* is specified, then *startdate* and *starttime* are present.

The log shows the same information as it could be derived from looking on the protection switches reported by means of REPT EVT and REPT SW.

Note: In case of a 1+1 equipment protection switching causing one REPT SW notification and one REPT EVT notification, then two entries are reported in the retrieve log reply. But w.r.t. to log capacity, this is counted as only one event.

## Example input/output

### 1+1 Equipment protection group

The following example retrieves a manual switch to protection circuit pack for 1+1 equipment protection group:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-xcp-cp:SW,,,01-10,08-12-00"  
    "1-1-estgrp,COM:EVT,GP,TC,01-10,08-12-00:\Protection  
    Switch, EQPT, Manual switch\""  
;
```

### Multiplex section/line protection group (1+1 and 1:1)

The following example retrieves a lockout switch for a 1+1 multiplex section/line protection group:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-10-2,OC3:EVT,WKSWBK,TC,01-10,08-12-  
    00:\Protection Switch, OC3 port, Lockout switch,,  
    1+1/1x1\""  
;
```

### 2 fibre MS-SPRing/BLSR protection group

The following example retrieves a manual ring switch of the east side for a 2F MS-SPRing/BLSR protection group:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-10-2,OC48:EVT,WKSWPR-2,TC,01-10,08-12-  
    00:\Protection Switch, OC48 port, Manual switch, MSR,  
    2F\""
```

;

#### 4 fibre MS-SPRing/BLSR protection group

The following example retrieves a manual ring switch of the east side for a 4F MS-SPRing/BLSR protection group:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-10-1,OC192:EVT,WKSWPR-2,TC,01-10,08-12-  
    00:\\"Protection Switch, OC192 port, Manual switch, MSS,  
    4F\\"" ;
```

#### Path protection group

The following example retrieves an autonomous switch to protection for a 1+1 path protection group:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-10-1-25,STS1:EVT,WKSWPR-2,TC,01-10,08-12-  
    00:\\"Protection Switch, STS1 CS, SF\\"" ;
```

#### System clock

The following example retrieves a switch event for clock mode protection type:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD  
    "SYSTEM,SYST:EVT,HLDVRSYNC,TC,11-09,12-00-  
    00,,,\\"Protection switch,clock mode,Forced Holdover\\"" ;
```

#### System timing reference

The following example retrieves a switch event for system timing reference protection type:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;  
    LT-UNITE 98-01-01 08:00:00  
M 123456 COMPLD
```

```
"EXTREF1,SYST:EVT,PS,TC,11-09,12-00-00,,,:"Protection  
switch,sync reference,Manual switch\""
```

;

### Station timing reference

The following example retrieves a switch event for output timing reference protection type:

```
RTRV-LOG-PROTNSW:LT-UNITE::123456;
```

```
LT-UNITE 98-01-01 08:00:00
```

```
M 123456 COMPLD
```

```
"LINE2,OUTT:EVT,INHSWPR,SC,11-09,12-00-00,,,:
```

```
\\"Protection switch,output reference,Lockout\""
```

;

### Error responses

#### Validation rule: matching log entry

There is at least one matching log entry for the specified *startdate* and *starttime* if replytype equals DBSYNC.

Error code: SNVS - Status, Not in Valid State, no matching log entry

### Related TL1 messages

- "REPT EVT: Report event" (6-47)
- "REPT SW: Report switch" (8-133)
- "RTRV-LOG-ALM: Retrieve log alarm" (6-54)
- "RTRV-LOG-NTFCN: Retrieve notification Log" (5-58)

### References GR-833-CORE



## Autonomous notifications

---

**System start-up with  
default DB**

The system will start-up with an empty protection log as part of the default DB.

**System start-up after DB  
transformation**

The system will start-up with an empty protection log after a database transformation has taken place in context of an SW upgrade.





# Ring map

## Overview

---

**Purpose**    Each NE within a 2-/4fibre MS-SPRing/BLSR ring will maintain a ring map entity for each MS-SPRing/BLSR protection group entity. The ring map either will be discovered automatically by the NEs (default) or manually be entered by the user (see also parameter and in “ENT-PROTN-GRP: Enter protection group” (8-56)).

The ring map consists of:

- the nodes within the ring
- the links connecting the nodes.

If the automatic ring discovery is disabled and the ring map is entered manually, the links connecting the nodes may not be retrievable. The ring map can be edited manually with ED-MAP-RING and is then stored in volatile memory. With SET-MAP-RING, the new ring map is written to NVM and activated.

### Contents

|                                          |                       |
|------------------------------------------|-----------------------|
| RTRV-MAP-RING: Retrieve map ring         | <a href="#">8-158</a> |
| ED-MAP-RING: Edit map ring               | <a href="#">8-165</a> |
| SET-MAP-RING: Set map ring               | <a href="#">8-168</a> |
| SET-MAP-RING: notification               | <a href="#">8-170</a> |
| ED-FETID: Edit Far End Target Identifier | <a href="#">8-171</a> |
| ED-FETID notification                    | <a href="#">8-174</a> |



## RTRV-MAP-RING: Retrieve map ring

---

The RTRV-MAP-RING command retrieves the ring map for one MS-SPRing/BLSR protection group.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
 Priority: 1  
 Abortable: Yes.

**Input format** Command Syntax: RTRV-MAP-RING:*tid*:[*aid*]:*ctag*::[*rid*],[*mapsrc*];

**Important!** To make sure that the complete ring map information will be given the RTRV-RING-MAP command should always be issued against the UNITE NE within the ring.

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
 This parameter specifies the aid of a MS-SPRing/BLSR protection group or an port aid being a member of the group.  
 Option: If *rid* is specified, then *aid* can be omitted.  
 Type: AID.  
 Range: TwoFibre\_ProtGrpAID (not ranged) or FourFibre\_ProtGrpAID (not ranged) or SPortAID (not ranged)
3. *ctag* – Correlation Tag  
 See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).

RTRV-MAP-RING: Retrieve map ring

4. **rid** – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If ***aid*** is specified, then ***rid*** can be omitted.
5. **mapsrc** – Map source  
This parameter specifies, how the ring map is derived. The value DCCEI is used if the ring map is derived via the DCF function. The value NVMRING is used if the ring map is derived from non-volatile memory as used by the MS-SPRing/BLSR protection group. The value MANUAL shall be used, if the ring map data which was manually populated by the user and stored in RAM shall be shown.  
Note: If NVMRING is specified and there is a valid and complete ringmap in NVM, it will be reported. Otherwise, nothing will be reported.  
Type: alphanumeric value set.  
Range: DCCEI, NVMRING, MANUAL.  
Default: DCCEI.

**Output format** After receiving the RTRV-MAP-RING command, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid:rid,localnid:spec_block"
  ...
  ...
  "aid:rid,localnid:spec_block"
;
```

## Output parameters

### Command parameters

1. aid – Access Identifier  
This parameter specifies the aid of 2F-/4F MS-SPRing/BLSR protection.  
Type: AID  
Range: TwoFibre\_ProtGrpAID or FourFibre\_ProtGrpAID
2. rid – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).
3. localnid – Local Node ID  
This parameter specifies the local node ID of the NE receiving the retrieve request (i.e. the node which has been addressed within RTRV-MAP-Ring command) as used by the MS-SPRing/BLSR APS protocol.  
Type: numeric string  
Range: 0 .. 15

### Spec block parameters

1. nid – Node ID  
This parameter specifies the node ID of the NE within the ring as used by the MS-SPRing/BLSR APS protocol. It shall correspond to the first TID in the *linkid* block.  
Type: numeric string  
Range: 0 .. 15
2. linkId – Link Identifier  
This parameter specifies a link connecting two NEs within the ring. It has the following format:  
*linkid*=\"{*nename*,[*port*],*direction*},{*nename*,[*port*],*direction*}\"  
The first value set of *nename*.*port*, *direction* corresponds to the NE as indicated by parameter *nid*.  
The second value set of *nename*.*port*, *direction* corresponds to the NE reachable via the link.  
The port and direction may be omitted, if the value mapsrc is MANUAL.  
Type: inner string  
Range: see parameter description for *nename*.*port*, *direction*
3. nename – NE Name  
See definition of parameter *tid* “RTRV-HDR: Retrieve header” (5-8).

RTRV-MAP-RING: Retrieve map ring

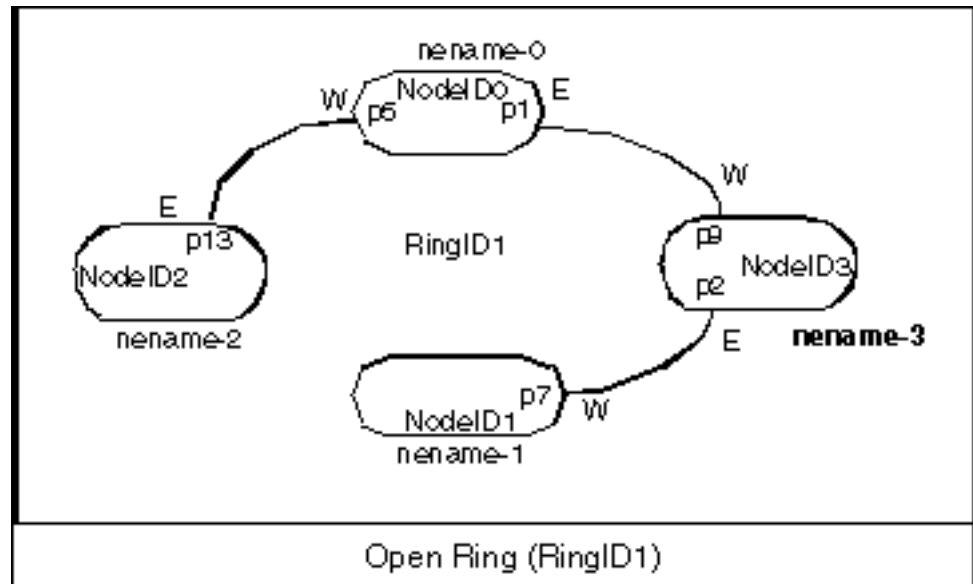
4. port – port AID  
This parameter specifies the port being a member within the 2-/4-fibre MS-SPRing/BLSR protection group.  
Type: AID, in case *nename* denotes the local NE; AID string, in case *nename* denotes another NE in the ring.  
Range: SPortAID, in case of an AID; up to 20 characters otherwise  
Option: The parameter may be omitted if unknown due to link failure.
5. direction – Direction  
This parameter specifies the side role of the corresponding port within the protection group. The value E is used for the east side. The value W is used for the west side.  
Type: alphanumeric value set  
Range: E, W  
Option: The parameter may be omitted if unknown due to link failure.
6. continuity – Link Continuity Status  
This parameter specifies the link continuity status of a port. The following values are supported:
  - UP – The link is working.
  - DOWN – The link has failed.
  - OPEN – The link is non-existent, as in an open ring.
  - UNKNOWN – The link ID has not been established.
  - ISOLATED – The link is in an isolated part of a segmented ring.
 Type: alphanumeric value set.  
Range: UP, DOWN, OPEN, UNKNOWN, ISOLATED.
7. net – Network Entity Title  
This parameter specifies the NSAP (Network Service Access Point) with the last byte (SEL byte – see NSAP format) set to 00 (hex) for the node with TID as specified for the first *nename* within *linkid* list.  
Type: Hexadecimal digit string  
Range: 40 characters

**Detailed behavior description**

For open rings, the output starts at the end with the lower *nid* value and continuous to the other end. For closed rings, the output starts at

the node with the lowest *nid* value and continues in the direction of the first node's east neighbor.

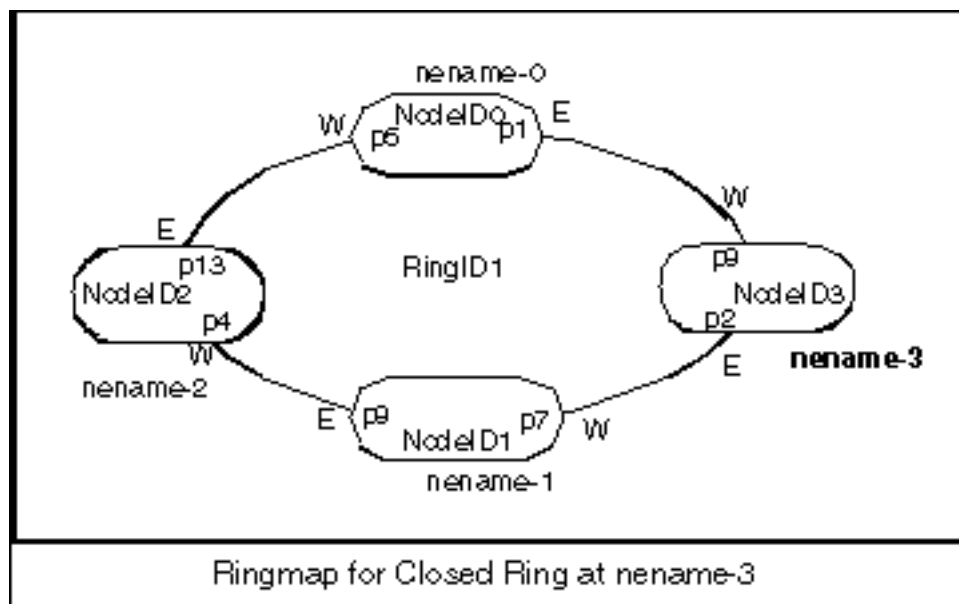
**Example input/output**    Ring map for an open ring – example 1



RTRV-MAP-RING for example 1:

```
RTRV-MAP-RING:NENAME-1:1-1-f01:123456;
    NENAME-1 98-01-01 08:00:00
M   123456 COMPLD
    "1-1-f01:\\"RingID1\\",1:nid=1,linkid=\{"nename-1,
      1-1-#-#-4-7,W},{nename-3,1-1-#-#-2-2,E}\",
      continuity=UP,
      net=39840F800000000000000000000000000000a100"
    "1-1-f01:\\"RingID1\\",1:nid=3,linkid=\{"nename-3,
      1-1-#-#-3-9,W},{nename-0,1-1-#-#-1-1,E}\",
      continuity=UP,
      net=39840F800000000000000000000000000000a300"
    "1-1-f01:\\"RingID1\\",1:nid=0,linkid=\{"nename-0,
      1-2-#-#-2-5,W},{nename-2,1-2-#-#-1-13,E}\",
      continuity=UP,
      net=39840F800000000000000000000000000000a000"
    "1-1-f01:\\"RingID1\\",1:nid=2,linkid=\{"nename-2,,},
      {nename-1,,}\",continuity=OPEN,
      net=39840F800000000000000000000000000000a200"
```

## Ring map for an closed ring – example 2



## RTRV-MAP-RING for example 2:

```
RTRV-MAP-RING:NENAME-3::123456:\\"RingID1\\";  
NENAME-3 98-01-01 08:00:  
M 123456 COMPLD  
    "1-1-f01:\\\"RingID1\\\",3:NID=0,linkid=\\\"{nename-0,  
    1-1-#-#-4-1,E},{nename-3,1-1-#-#-2-9,W}\\\" ,  
    continuity=UP,  
    net=39840F80000000000000000000000000a000"  
    "1-1-f01:\\\"RingID1\\\",3:NID=3,linkid=\\\"{nename-3,  
    1-1-#-#-3-2,E},{nename-1,1-1-#-#-1-7,W}\\\" ,  
    continuity=UP,  
    net=39840F80000000000000000000000000a300"  
    "1-1-f01:\\\"RingID1\\\",3:NID=1,linkid=\\\"{nename-1,  
    1-1-#-#-4-9,E},{nename-2,1-1-#-#-3-1,W}\\\" ,  
    continuity=UP,  
    net=39840F80000000000000000000000000a100"  
    "1-1-f01:\\\"RingID1\\\",3:NID=2,linkid=\\\"{nename-2,  
    1-1-#-#-2-13,E},{nename-0,1-1-#-#-1-1,W}\\\" ,  
    continuity=UP,  
    net=39840F80000000000000000000000000a200"  
;
```

RTRV-MAP-RING: Retrieve map ring

**RTRV-MAP-RING for example 3**

```

RTRV-MAP-RING:NENAME-3::123456:"RingID1",MANUAL;
  NENAME-3 98-01-01 08:00:
M 123456 COMPLD
  "1-1-f01:"RingID1",3:NID=0,linkid="{nename-0,,},
  {nename-3,1-1-f01-ww-tr2-1,W}",continuity=UNKNOWN"
  "1-1-f01:"RingID1",3:NID=3,linkid="{nename-3,
  1-1-f01-ew-tr3-1,E},{nename-1,,}",continuity=UNKNOWN"
  "1-1-f01:"RingID1",3:NID=1,linkid="{nename-1,,},
  {nename-2,,}",continuity=UNKNOWN"
  "1-1-f01:"RingID1",3:NID=2,linkid="{nename-2,,},
  {nename-0,,}",continuity=UNKNOWN"
;

```

**Related TL1 messages**

- “ENT-ULSDCC-L3: Create a further OSI node” (12-60)§
- “RTRV-MAP-NEIGHBOR: Retrieve map neighbor” (12-114)
- “RTRV-MAP-NETWORK: Retrieve network map” (12-119)
- “ED-MAP-RING: Edit map ring” (8-165)
- “SET-MAP-RING: Set map ring” (8-168)
- “ENT-PROTN-GRP: Enter protection group” (8-56)

**References** GR-199-CORE



## ED-MAP-RING: Edit map ring

---

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): M3  
                   Priority: 1  
                   Abortable: No.

**Input format**    Command Syntax: ED-MAP-RING:*tid*:*[aid]*:*ctag*::*[rid]*,*spec\_block*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2.    *aid* – Access Identifier  
       See definition in input parameters section “RTRV-MAP-RING: Retrieve map ring” (8-158).
3.    *ctag* – Correlation Tag  
       See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4.    *rid* – Ring Identification  
       See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
       Option: If *aid* is specified, then *rid* can be omitted. If *rid* is omitted, the *aid* parameter is used to select a ring. The values of *aid* and *rid* must not both be omitted.

#### Spec block parameters

1.    *localnid* – Local Node ID  
       See definition in output parameters section “RTRV-MAP-RING: Retrieve map ring” (8-158).  
       Option: The operator is responsible of the uniqueness of the value in the ring.
2.    *ringdir* – Ring Direction  
       This parameter indicates whether the local node’s east or west provisioned or hardwired direction port is connected to the next node in the ring map.  
       Type: alphanumeric string.  
       Range: E.

3. **rnids – Ring Node Identifiers**  
This is an ampersand-separated list with a maximum of 16 entries, where each entry is an integer between 0 and 15. The first entry shall be the lowest numbered node ID on the ring. Each subsequent value is the node ID of the next node on the ring. Each permitted value may only be used once in the list. The number of values defines the number of nodes on the ring. If the number of nodes specified is smaller than previously specified, those unspecified entries in the ring map are set to the default value.  
Type: string.  
Range: All permutations of a subset of {0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15} separated by a '&'.
4. **rtids – Ring Node Target Identifiers**  
This is an ampersand-separated list with a maximum of 16 entries, where each entry is a valid TID. Each entry in the list is the TID corresponding to the entry in that position of the rnids list. Similarly, if the size of the ring map decreases from the previous ED-MAP-RING command, those unspecified TID entries in the ring map are set to the default value. The number of values for rnids and rtids must be equal.  
Option: If *aid* is specified, then *rid* can be omitted.  
Type: string.  
Range: 16 ampersand-separated TIDs.  
Default: None (empty).

|                                      |                                                                                                                                                                                                                                                                              |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output format</b>                 | After receiving the ED-MAP-RING command, the following normal completion response is returned:<br><br>sid date time<br>M ctag COMPLD<br>;<br><br>                                                                                                                            |
| <b>Output parameters</b>             | See definition in output parameters section in “RTRV-HDR: Retrieve header” (5-8).                                                                                                                                                                                            |
| <b>Detailed behavior description</b> | For open rings, the output shall start at the end with the lower nid value and shall continue to the other end. For closed rings, the output shall start at the node with the lowest <i>nid</i> value and shall continue in the direction of the first node’s east neighbor. |

**Example input/output**

The following is an example of the ED-MAP-RING command. Manually, node numbers 3 for NENAME-1, 14 for NENAME-2 and 8 for NENAME-3 are assigned:

```
ED-MAP-RING:NENAME-1::123456::RingID:rnids=3&14&8,  
rtids=NENAME-1&NENAME-2&NENAME-3;  
    NENAME-1 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Related TL1 messages**

- “ED-FETID: Edit Far End Target Identifier” (8-171)§
- “ED-PROTN-GRP: Edit protection group” (8-80)
- “ENT-PROTN-GRP: Enter protection group” (8-56)
- “RTRV-MAP-RING: Retrieve map ring” (8-158)
- “SET-MAP-RING: Set map ring” (8-168).

**References**

GR-199-CORE



## SET-MAP-RING: Set map ring

---

The SET-MAP-RING command writes the transitional, manually provisioned ring map to NVM for use by the MS-SPRing/BLSR protection group.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
 Priority: 1  
 Abortable: No

**Input format** Command Syntax: SET-MAP-RING:*tid*:[*aid*]:*ctag*::[*rid*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
 See definition in input parameters section “RTRV-MAP-RING: Retrieve map ring” (8-158).
3. *ctag* – Correlation Tag  
 See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. *rid* – Ring Identification  
 See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
 Option: If *aid* is specified, then *rid* can be omitted.

**Output format** After receiving the SET-MAP-RING command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

**Output parameters** See definition in output parameters section in “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description**

The SET-MAP-RING command is used to move the transitional manually provisioned ring map to NVM for use by the BLSR port protection group. This command will be denied if automatic ring discovery is enabled.

The SET-MAP-RING command is also denied if the list does not contain the local node, if the list does not contain at least 2 nodes, or if duplicate nid values appear in the list. The SET-MAP-RING command generates a REPT DBCHG message.

**Example input/output**

The following is an example of a SET-MAP-RING command:

```
SET-MAP-RING:NENAME-1::123456::rid1;  
    NENAME-1 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

**Validation rule: Automatic ring discovery to be disabled**

If the automatic ring discovery is enabled, the following error response shall be returned:

Error Code: SNVS - Status, Not Valid State

**Related TL1 messages**

- “ED-FETID: Edit Far End Target Identifier” (8-171)§
- “ED-MAP-RING: Edit map ring” (8-165)
- “ED-PROTN-GRP: Edit protection group” (8-80)
- “ENT-PROTN-GRP: Enter protection group” (8-56)

**References**

GR-199-CORE



## SET-MAP-RING: notification

---

**Output format** The SET-MAP-RING notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: SET-MAP-RING:*aid*;

### Output parameters

#### Command parameters

1. tid – Target Identifier  
See definition in input parameters section “SET-MAP-RING: Set map ring” (8-168).
2. aid – Access Identifier  
See definition in input parameters section “SET-MAP-RING: Set map ring” (8-168).
3. rid – Ring Identification  
See definition in input parameters section “SET-MAP-RING: Set map ring” (8-168).

**Example input/output** The following example reports the creation of a ring map in LT-UNITE’s NVM:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:SET-MAP-RING:rid1"
;
```



## ED-FETID: Edit Far End Target Identifier

---

**Properties**    Login Privilege: User Privilege Code (UCFC/UCAL): S3  
Priority: 1  
Abortable: No

**Input format**    Command Syntax: ED-FETID:*tid*:[*aid*]:*ctag*::[*rid*],*spec\_block*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
See definition in input parameters section “RTRV-MAP-RING: Retrieve map ring” (8-158).
3. *ctag* – Correlation Tag  
See definition in input parameters section “RTRV-HDR: Retrieve header” (5-8).
4. *rid* – Ring Identification  
See definition in output parameters section “RTRV-PROTN-GRP: Retrieve protection group” (8-13).  
Option: If *aid* is specified, then *rid* can be omitted. If *rid* is omitted, the *aid* parameter is used to select a ring. The values of *aid* and *rid* must not both be omitted.

### Spec block parameters

1. oldtid – Old Target Identifier  
This parameter is the previous TID of a remote node on the ring which may be associated with one or more local cross-connections.  
Type: identifier, in addition the special character underscore ("\_") and the password characters are allowed.  
Range: 1 to 20 characters.  
Default: LUCENT-UNITE-NE.
2. newtid – New Target Identifier  
The newtid parameter is the previous TID of a remote node on the ring which may be associated with one or more local cross-connections.  
Type: identifier, in addition the special character underscore ("\_") and the password characters are allowed.  
Range: 1 to 20 characters.  
Default: LUCENT-UNITE-NE.

**Output format** After receiving the ED-MAP-RING command, the following normal completion response shall be returned:

```
sid date time
M ctag COMPLD
;
```

**Output parameters** See definition in output parameters section in “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior description** The ED-FETID command is used to update the TID of a remote node on the ring which may be associated with one or more local cross-connections. The command can only be applied when automatic ring discovery is disabled. The network provider would then have to issue this command to every node on the ring. The ED-FETID command generates a REPT-DBCHG message.

**Example input/output** The following is an example of the ED-FETID command:

```
ED-FETID:NENAME-1::123456::RingID:oldtid=NENAME-
2,newtid=NENAME-3;
NENAME-1 98-01-01 08:00:00
M 123456 COMPLD
;
```



## Error responses

### Validation rule: Automatic ring discovery to be disabled

If the automatic ring discovery is enabled, the following error response shall be returned:

Error Code: SNVS - Status, Not Valid State

## Related TL1 messages

- “ED-MAP-RING: Edit map ring” (8-165)
- “RTRV-MAP-RING: Retrieve map ring” (8-158)
- “SET-MAP-RING: Set map ring” (8-168).

## References GR-199-CORE



## ED-FETID notification

---

**Output format** The SET-MAP-RING notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Command Syntax: ED-FETID:*tid*:[*aid*]:*ctag*::[*rid*],*spec\_block*;

### Output parameters

#### Command parameters

1. tid – Target Identifier  
See definition in input parameters section “ED-FETID: Edit Far End Target Identifier” (8-171).
2. aid – Access Identifier  
See definition in input parameters section “ED-FETID: Edit Far End Target Identifier” (8-171).
3. rid – Ring Identification  
See definition in input parameters section “ED-FETID: Edit Far End Target Identifier” (8-171).

#### Spec block parameters

1. oldtid – Old Target Identifier  
See definition in input parameters section “ED-FETID: Edit Far End Target Identifier” (8-171).
2. newtid – New Target Identifier  
See definition in input parameters section “ED-FETID: Edit Far End Target Identifier” (8-171).

**Example input/output** The following example reports the change of a TID in an NE’s ring map for a 4 fibre MS-SPRing/BLSR protection group:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
    "TIME=15-00-00,DATE=00-11-03:ED-FETID:RingID:oldtid=NE_
    1,newtid=NE_2"
;
```





# 9 TL1 messages - performance monitoring

## Overview

---

**Purpose** This section contains the TL1 interface definition for the domain “performance monitoring”.

### Contents

|                                           |                              |
|-------------------------------------------|------------------------------|
| <b>PM register/bin</b>                    | <a href="#"><u>9-2</u></a>   |
| PM parameters                             | <a href="#"><u>9-3</u></a>   |
| RTRV-PM: Retrieve performance monitoring  | <a href="#"><u>9-7</u></a>   |
| RTRV-EPM: Ethernet performance monitoring | <a href="#"><u>9-15</u></a>  |
| TCA notification                          | <a href="#"><u>9-19</u></a>  |
| <b>TCA Profile</b>                        | <a href="#"><u>9-22</u></a>  |
| TCA Profile                               | <a href="#"><u>9-23</u></a>  |
| RTRV-TCA-PROF: Retrieve TCA Profile       | <a href="#"><u>9-25</u></a>  |
| ENT-TCA-PROF: Enter TCA Profile           | <a href="#"><u>9-60</u></a>  |
| ENT-TCA-PROF notification                 | <a href="#"><u>9-63</u></a>  |
| ED-TCA-PROF: Edit TCA profile             | <a href="#"><u>9-81</u></a>  |
| ED-TCA-PROF notification                  | <a href="#"><u>9-101</u></a> |
| DLT-TCA-PROF: Delete TCA Profile          | <a href="#"><u>9-119</u></a> |
| DLT-TCA-PROF notification                 | <a href="#"><u>9-122</u></a> |
| System Start-up with Default DB           | <a href="#"><u>9-123</u></a> |



# PM register/bin

## Overview

---

**Purpose** This section contains the TL1 interface definitions listed below.

### Contents

|                                           |                      |
|-------------------------------------------|----------------------|
| PM parameters                             | <a href="#">9-3</a>  |
| RTRV-PM: Retrieve performance monitoring  | <a href="#">9-7</a>  |
| RTRV-EPM: Ethernet performance monitoring | <a href="#">9-15</a> |
| TCA notification                          | <a href="#">9-19</a> |



## PM parameters

---

### PM parameter overview

This section gives an overview of all PM parameters and the associated TCA profiles. Overview tables are given for the entities supporting of PM parameters:

- SONET ports/tribs
- SDH ports/tribs
- Ethernet ports.

Each table consists of the following rows:

- PM parameter short name (as defined in the *montype* parameter)
- PM parameter long name
- associated TCA profile type (as defined in the *pftype* parameter).

Note: If thresholding is not applicable for a PM parameter, the value 'None' is specified as associated profile type.

### SONET PM parameter table

| Short name | Long name                               | Profile type |
|------------|-----------------------------------------|--------------|
| CVS        | Code Violation Section                  | SECTION-LINE |
| ESS        | Errored Second Section                  | SECTION-LINE |
| SESS       | Severely Errored Second Section         | SECTION-LINE |
| SEFS-S     | Severely Errored Framing Second Section | SECTION-LINE |
| LOSS-S     | LOS Second Section                      | None         |
| CVL        | Code Violation Line                     | SECTION-LINE |
| ESL        | Errored Second Line                     | SECTION-LINE |
| SESL       | Severely Errored Second Line            | SECTION-LINE |
| UASL       | Unavailable Second Line                 | SECTION-LINE |
| FECC-L     | Forward Error Correction Corrected Line | SECTION-LINE |
| AISS-L     | AIS Second Line                         | None         |
| FC-L       | Failure Count Line                      | None         |
| CV-LFE     | Code Violation Line Far End             | SECTION-LINE |
| ES-LFE     | Errored Second Line Far End             | SECTION-LINE |
| SES-LFE    | Severely Errored Second Line Far End    | SECTION-LINE |

| Short name | Long name                          | Profile type |
|------------|------------------------------------|--------------|
| UAS-LFE    | Unavailable Second Line Far End    | SECTION-LINE |
| FC-LFE     | Failure Count Line Far End         | None         |
| CVP        | Code Violation Path                | PATH         |
| ESP        | Errored Second Path                | PATH         |
| SESP       | Severely Errored Second Path       | PATH         |
| UASP       | Unavailable Second Path            | PATH         |
| FC-P       | Failure Count Path                 | None         |
| CV-PFE     | Code Violation Path Far End        | PATH         |
| ES-PFE     | Errored Second Path Far End        | PATH         |
| SES-PFE    | Severely Errored Path Line Far End | PATH         |
| UAS-PFE    | Unavailable Second Path Far End    | PATH         |
| FC-PFE     | Failure Count Path Far End         | None         |

#### SDH PM parameter table

| Short Name | Long Name                                      | Profile Type |
|------------|------------------------------------------------|--------------|
| RS-N-ES    | RS Near End Errored Second                     | RS-MS        |
| RS-N-SES   | RS Near End Severely Errored Second            | RS-MS        |
| RS-N-BBE   | RS Near End Background Block Error             | RS-MS        |
| RS-N-UAS   | RS Near Unavailable Second                     | RS-MS        |
| MS-N-ES    | MS Near End Errored Second                     | RS-MS        |
| MS-N-SES   | MS Near End Severely Errored Second            | RS-MS        |
| MS-N-BBE   | MS Near End Background Block Error             | RS-MS        |
| MS-N-UAS   | MS Near Unavailable Second                     | RS-MS        |
| MS-N-FECC  | MS Near End Forward Error Correction Corrected | RS-MS        |
| MS-F-ES    | MS Far End Errored Second                      | RS-MS        |
| MS-F-SES   | MS Far End Severely Errored Second             | RS-MS        |
| MS-F-BBE   | MS Far End Background Block Error              | RS-MS        |
| MS-F-UAS   | MS Far Unavailable Second                      | RS-MS        |
| VC-N-ES    | VC Near Unavailable Second                     | HOVC         |
| VC-N-SES   | VC Near End Errored Second                     | HOVC         |

| Short Name | Long Name                           | Profile Type |
|------------|-------------------------------------|--------------|
| VC-N-BBE   | VC Near End Severely Errored Second | HOVC         |
| VC-N-UAS   | VC Near End Background Block Error  | HOVC         |
| VC-F-ES    | VC Far End Errored Second           | HOVC         |
| VC-F-SES   | VC Far End Severely Errored Second  | HOVC         |
| VC-F-BBE   | VC Far End Background Block Error   | HOVC         |
| VC-F-UAS   | VC Far Unavailable Second           | HOVC         |

### Ethernet PM parameter table

| Short Name | Long Name                                          | Profile Type |
|------------|----------------------------------------------------|--------------|
| CBR        | Count (number) of MegaBytes (10e6 octets) Received | None         |
| CBS        | Count (number) of MegaBytes (10e6 octets) Sent     | None         |
| PDE        | number of Errored Packets Dropped                  | ENET         |

### Details for PM parameters with no thresholding

Below those PM parameters are described which do not support thresholding. All other parameters which support thresholding are described in the Output Parameters section of RTRV-TCA-PROF.

### SONET PM parameters

1. qhaissl  
Description: 15-minute AISS-L bin for OC-n.  
Type: integer  
Range: 0-900
2. dayaissl  
Description: Day AISS-L bin for OC-n.  
Type: integer  
Range: 0-86400
3. qhlosss  
Description: 15-minute LOSS-S bin for OC-n.  
Type: integer  
Range: 0-900

4. daylosss  
Description: Day LOSS-S bin for OC-n.  
Type: integer  
Range: 0-86400
5. qhfcl  
Description: 15-minute FC-L and FC-LFE bin for OC-n lines  
Type: integer  
Range: 0-900
6. dayfcl  
Description: Day FC-L and FC-LFE bin for OC-n lines  
Type: integer  
Range: 0-86400
7. qhfcp  
Description: 15-minute FC-P and FC-PFE bin for STS1 and STS1-xC (x=3, 12, 48, 192) tributaries  
Type: integer  
Range: 0-900
8. dayfcp  
Description: Day FC-P and FC-PFE bin for STS1 and STS1-xC (x=3, 12, 48, 192) tributaries  
Type: integer  
Range: 0-86400

#### **Ethernet PM parameters**

1. qhcbr  
Description: 15-minute CBR for a Ethernet port  
Type: integer  
Range: 0-110000
2. daycbr  
Description: Day CBR for a Ethernet port.  
Type: integer  
Range: 0-10560000
3. qhcbs  
Description: 15-minute CBS for a Ethernet port  
Type: integer  
Range: 0-110000
4. daycbs  
Description: Day CBS for a Ethernet port.  
Type: integer  
Range: 0-10560000





## RTRV-PM: Retrieve performance monitoring

---

The RTRV-PM command is initiated by a user to request the NE to send the current and/or historical Performance Monitoring (PM) data associated with one or more facilities. For each value in the *montype* parameter of the RTRV-PM Input parameters section PM counter values will be stored in the current 15-minute period, the 32 previous 15-minute periods (past 8 hours worth of data), current day, and previous day periods.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): PM1  
                      Priority: 1  
                      Abortable: Yes.

**Input format**      Command Syntax:  
                          RTRV-PM-*modifier:tid:aid:ctag::[montype], [monlev], [locn],,tmper,*  
                          *[mondatt], [montm];*

### Input parameters

#### Command parameters

1.    *modifier*  
       This parameter indicates the port type or tributary on which the RTRV-PM command is to act on.  
       Type: alphanumeric value set  
       Range: The following values are for SONET only: STS1, STS3C, STS12C, STS48C, STS192C, OC3, OC12, OC48, OC192, OC768.  
       The following values are for SDH only: VC3, VC4, VC44C, VC416C, VC464C, STM1, STM4, STM16, STM64, STM256.
2.    *tid* – Target Identifier  
       See definition in “RTRV-HDR: Retrieve header” (5-8).

## 3. aid – Access Identifier

Type: AID

Range: For STM&lt;N&gt; and OC&lt;N&gt; modifiers only: SPortAID.

For VC3, VC4, VC44C, VC416C, VC464C, STS1, STS3C, STS12C, STS48C and STS192C modifiers only: STS1NumAID.

And for VC4 and STS1 modifiers also: VCGNumAID.

Range is supported up to shelf level or system level; i.e.

ALL-ALL-#-#-ALL-ALL (on port level).

ALL-ALL-#-#-ALL-ALL-ALL (on tributary level).

## 4. ctag – Correlation Tag

See definition in “RTRV-HDR: Retrieve header” (5-8).

## 5. montype – Monitored parameter type

This is the monitored parameter type for which data is requested.

If the value is omitted, this parameter defaults to ALL.

Type: value set

Range: The following values are for all OC&lt;N&gt; modifiers only:

CVS, ESS, SESS, SEFS-S, LOSS-S, CVL, ESL, SESL, UASL, AISS-L, FC-L, CV-LFE, ES-LFE, SES-LFE, UAS-LFE, FC-LFE.

The following values are also for OC192 and OC768 modifiers only: FECC-L.

The following values are for STS1 (path) and are also applicable to STS3C, STS12C, STS48C and STS192C modifiers only: CVP, ESP, SESP, UASP, FC-P, CV-PFE, ES-PFE, SES-PFE, UAS-PFE, FC-PFE.

The following values are for all STM&lt;N&gt; modifiers only:

RS-N-ES, RS-N-SES, RS-N-BBE, RS-N-UAS, MS-N-ES, MS-N-SES, MS-N-BBE, MS-N-UAS, MS-F-ES, MS-F-SES, MS-F-BBE, MS-F-UAS.

The following values also are for STM64 and STM256 modifiers only: MS-N-FECC.

The following values are for VC3, VC4, VC44C, VC416C and VC464C modifiers only: VC-N-ES, VC-N-SES, VC-N-BBE, VC-N-UAS, VC-F-ES, VC-F-SES, VC-F-BBE, VC-F-UAS.

The following value is also allowed for all input modifiers: ALL.

Default: ALL.

## 6. monlev – Monitored Level

This parameter provides the level for the monitored PM parameter. The parameter is only evaluated if the value of *montype* parameter is ALL.

Type: value set.

Range:

- 1-UP: Means the NE will report, non-zero data only.
- 0-UP: Means the NE will report zero and all positive data. If *monlev* is 0-UP, AID ranging must be below slot level.

Default: 1-UP.

7. locn – Location

Location for which the PM data is monitored. The parameter value is only considered if the *montype* value is ALL; otherwise it is ignored for the calculation of the command reply (i.e has no impact on the command).

Type: value set.

Range:

- NEND: Near-End PM data is requested.
- FEND: Far-End PM data is requested.
- ALL: All near-end and far-end data is requested. It applies only to input direction.

Default: ALL.

8. tmper – Time Period

This requests PM data for a specified time interval.

Type: value set.

Range:

- 15-MIN: This requests PM data in 15-minute intervals
- 1-DAY: This requests daily PM data.

9. mondat – Monitored Date

This requests the beginning date of the interval for which the PM data is to be reported. For both values of tmper parameter, the maximum allowable range of valid dates includes the current and previous one day.

Type: value set.

Range:

- MM-DD: Month-Day. A leading zero (first M or first D) is optional and may be omitted.
- ALL: Current and previous day.

Default: Current date

10. montm – Monitored Time

This parameter specifies the beginning time of day of the requested PM period that was set by ***tmper*** parameter. The user is able to specify a monitored time in three modes:

- a. A monitored time interval (i.e., from hour-minutes to hour-minutes: HOD-MOH&&THOD-TMOH).
- b. A single time interval (i.e., the hour and minutes for the appropriate 15 minute data: HOD-MOH).
- c. All applicable beginning times for the given ***mondatt*** value (i.e., all).

Where HOD-MOH represents the start of the requested PM retrieval period (hours and minutes) and THOD-TMOH represents the end of the requested PM retrieval period. The value ALL must be used if the ***mondatt*** value provided is ALL.  
Type: character string.

Range:

- HOD-MOH: This specifies the beginning time of day of the requested PM period that was set by ***tmper*** parameter. This parameter may be omitted or have one of the following values: Hour Of Day- Minute Of Hour, where HOD ranges from 0 to 23 and MOH is 0, 15, 30 and 45. A leading zero is optional. For example, 00 means 0.
- THOD-TMOH: To Hour Of Day-To Minute Of Hour, where THOD ranges from 0 to 23 and TMOH is 0, 15, 30 and 45. A leading zero is optional. For example, 00 means 0. Parameter grouping is used when specifying THOD-TMOH. For example, 08-15&&09-00 specifies the HOD-MOH and THOD-TMOH of 08-15 and 09-00, respectively. THOD-TMOH of \$\$-\$\$ indicates the current Hour Of Day-Minute Of Hour. THOD-TMOH of ##-## indicates the previous 15-min interval.
- ALL: All applicable beginning times for the given ***mondatt*** value.

If the ***tmper*** value is 1-DAY, the ***montm*** parameter will not be used.

Default:

If THOD-TMOH is not specified, only the PM data for the retrieval period specified by HOD-MOH will be retrieved.

If HOD-MOH is omitted, the PM period for the current time will be reported.

**Output format** If the NE fully complies with the RTRV-PM request, the following normal completion response is returned:

```
      sid date time
M  ctag COMPLD
    "aid:montype,monval,[validity],[tca],[locn],,tmper,
    [mondat],[montm]"
    . . . . .
    . . . . .
    . . . . .
;
```

Note: The trailing comma has to be present even if the optional parameter is not supported for a dedicated release.

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

#### Normal completion message – empty reply

If there is no PM data stored within the NE, then the following response is returned:

```
      sid date time
M  ctag COMPLD
;
```

#### Output parameters

1. aid – Access Identifier  
Description: Access identifier.  
Type: AID  
Range: For STM<N> and OC<N> modifiers only: SPortAID.  
For VC3, VC4, VC44C, VC416C, VC464C, STS1, STS3C, STS12C, STS48C and STS192C modifiers only: STS1NumAID.  
And for VC4 and STS1 modifiers also: VCGNumAID
2. montype – Monitored Parameter Type  
See montype in the input parameters section.

## 3. monval – Monitored Value

This parameter specifies the measured value of the parameter specified in montype.

Type: integer.

Range: 0-4294967295

The specified range is the maximal range taking all PM parameters into consideration. Specific PM parameters may have a smaller range.

W.r.t. value range for the specific PM parameters see

- Output Parameters section in RTRV-TCA-PROF (if thresholding is applicable for that parameter)
- PM parameter introduction section (if thresholding is not applicable for that parameter).

## 4. validity – validity indicator

This parameter indicates the validity of the PM data.

Type: integer.

Range: 1: valid; (omitted): non-valid.

## 5. tca – Threshold Crossing Alert

Type: value set.

Range: tca, indicates that for the affected interval a tca alarm is/was active. If the value is omitted, it indicates that no tca alarm is/was active in the affected interval.

## 6. locn – Location

Location for which the PM data is monitored.

Type: value set.

Range:

- NEND: Near-End PM data is requested
- FEND: Far-End PM data is requested.

## 7. tmper – Time Period

See in the input parameters section.

RTRV-PM: Retrieve performance monitoring

## 8. mondat – Monitored Date

This parameter specifies the beginning date of the interval for which the PM data is reported. The parameter can be omitted in case of current date.

Type: value set.

Range: MM-DD: Month-Day

Default: Current date

## 9. montm – Monitored Time

This parameter specifies the beginning time of day for the reported pm register. The parameter is optional and may be omitted for the reporting of current bins (registers).

Type: character string.

Range: HOD-MOH: HOD ranges from 0 to 23; MOH is 0, 15, 30 and 45. A leading zero is optional. For example, 00 means 0.

**Example input/output**

The following example shows the successful completion of a RTRV-PM command by the NE for a VC3:

```
RTRV-PM-vc3:UNITE-NE:1-1-#-#-5-1-27:123456::vc-f-es,1-
up,,,15-min , ,
00-00&&08-00;
UNITE-NE 00-01-01 08:00:00
M 123456 COMPLD
"1-1-#-#-5-1-27:vc-f-es,17,,tca,,,15-min,,00-00"
"1-1-#-#-5-1-27:vc-f-es,10,,tca,,,15-min,,00-15"
. . .
"1-1-#-#-5-1-27:vc-f-es,15,,tca,,,15-min,,08-00"
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-PM command. See also subsection ‘Partial Completion on RTRV Commands’ w.r.t. handling of internal error (e.g. communication to XC320 fails) for a subset of replies.

**Related TL1 messages**

- “RTRV-EPM: Ethernet performance monitoring” (9-15)
- “DLT-TCA-PROF: Delete TCA Profile” (9-119)
- “ED-TCA-PROF: Edit TCA profile” (9-81)

RTRV-PM: Retrieve performance monitoring

- “ENT-TCA-PROF: Enter TCA Profile” (9-60)
- “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25)

**References** GR-833-CORE





## RTRV-EPM: Ethernet performance monitoring

---

The RTRV-EPM command is initiated by a user to request the NE to send the current and/or historical Performance Monitoring (PM) data associated with one or more Ethernet ports. For each value in the ***emontype*** parameter of the RTRV-EPM Input Parameters section PM counter values will be stored in the current 15-minute period, the 32 previous 15-minute periods (past 8 hours worth of data), current day, and previous day periods.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): PM1  
 Priority: 1  
 Abortable: Yes.

**Input format**      Command Syntax:  
 RTRV-EPM-***modifier:tid:aid:ctag::[emontype], [monlev],tmper,***  
***[mondatt], [montm];***

### Input parameters

#### Command parameters

1.    **modifier**  
 This parameter indicates the Ethernet port on which the RTRV-EPM command is to act on.  
 Type: alphanumeric value set  
 Range: ENET.
2.    **tid – Target Identifier**  
 See definition in “RTRV-HDR: Retrieve header” (5-8).
3.    **aid – Access Identifier**  
 Type: AID.  
 Range: EPortAID, VCGAID.  
 Range is supported up to shelf level or system level; i.e.  
 ALL-ALL-#-#-ALL-ALL (range over EPortAID)  
 ALL-ALL-#-#-ALL-vALL (range over VCGAID).
4.    **ctag – Correlation Tag**  
 See definition in “RTRV-HDR: Retrieve header” (5-8) in the input parameters section.

5. emontype – Monitored parameter type  
This is the monitored parameter type for which data is requested.  
If the value is omitted, this parameter defaults to ALL.  
Type: value set.  
Range: CBR, CBS, PDE.  
The following value is for input monitored type only: ALL.  
Default: ALL.
6. monlev – Monitored Level  
See definition in “RTRV-PM: Retrieve performance monitoring”  
(9-7) in the input parameters section.
7. tmper – Time Period  
See definition in “RTRV-PM: Retrieve performance monitoring”  
(9-7) in the input parameters section.
8. mondat – Monitored Date  
See definition in “RTRV-PM: Retrieve performance monitoring”  
(9-7) in the input parameters section.
9. montm – Monitored Time  
See definition in “RTRV-PM: Retrieve performance monitoring”  
(9-7) in the input parameters section.

## Output format

### Normal completion message

If the NE fully complies with the RTRV-PM request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid,aidtype:emontype,monval,[validity],[tca],tmper,
  [mondat],[montm]"
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

### Normal completion message – empty reply

If there is no PM data stored within the NE, then the following response is returned:

```
sid date time
```

M ctag COMPLD  
;

## Output parameters

1. aid – Access Identifier  
Description: Access identifier.  
Type: AID.  
Range: EPortAID, VCGAID.
2. aidtype - Aid type  
Type: value set.  
Range: ENET
3. emontype – Monitored parameter type  
See definition in “RTRV-HDR: Retrieve header” (5-8) in the input parameters section.
4. monval – Monitored Value  
This parameter contains the measured value of the parameter specified in *montype*.  
Type: integer.  
Range: 0-4294967295  
The specified range is the maximal range taking all PM parameters into consideration. Specific PM parameters may have a smaller range.  
W.r.t. value range for the specific PM parameters see
  - PM parameter introduction section (if thresholding is not applicable for that parameter).
5. validity – validity indicator  
See definition in “RTRV-PM: Retrieve performance monitoring” (9-7) in the output parameters section.
6. tca – Threshold Crossing Alert  
See definition in “RTRV-PM: Retrieve performance monitoring” (9-7) in the output parameters section.
7. tmper – Time Period  
See definition in “RTRV-PM: Retrieve performance monitoring” (9-7) in the input parameters section.

8. mondat – Monitored Date  
See definition in “RTRV-PM: Retrieve performance monitoring” (9-7) in the output parameters section.
9. montm – Monitored Time  
See definition in “RTRV-PM: Retrieve performance monitoring” (9-7) in the output parameters section.

**Example input/output**

The following example shows the successful completion of a RTRV-EPM command by the NE:

```
RTRV-EPM-ENET:UNITE-NE:1-1-#-#-01-1:123456::PDE,,  
15-MIN,01-01,08-00;  
    UNITE-NE 00-01-01 08:00:00  
M 123456 COMPLD  
    "1-1-#-#-01-1,ENET:PDE,2,,,15-MIN,01-01,08-00"  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there also apply to the RTRV-EPM command.

**Related TL1 messages**

- “RTRV-PM: Retrieve performance monitoring” (9-7)
- “DLT-TCA-PROF: Delete TCA Profile” (9-119)
- “ED-TCA-PROF: Edit TCA profile” (9-81)
- “ENT-TCA-PROF: Enter TCA Profile” (9-60)
- “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25)

**References**

GR-833-CORE



## TCA notification

---

**Output format** The Threshold Crossing Alert (TCA) notification shall use the general format of a REPT EVT notification.

Command syntax: REPT EVT *modifier*

*aid:condtype,condeff,ocrdat,ocrtm,,,,thlev,tmper:conddescr*

### Output parameter

1. modifier
2. aid – Access Identifier  
Type: AID  
Range:
  - for STM<N> and OC<N> ports: SPortAID
  - for STS/VC tribs: STS1NumAID
  - for VCGtribs: VCGNumAID
  - for Ethernet ports: EPortAID VCGAID.
3. condeff – Condition Effect  
See definition in section Output parameters of “REPT EVT: Report event” (6-47).
4. conddescr – Description Of The Condition  
The general format is: category, entity, description, additional text. If there is no additional text, then the trailing comma may be omitted.  
Type: inner string  
Range:
  - For STM<N> and OC<N>: Quality of service, {rr} port, TCA where rr is equal to the port rate
  - For VC3, VC4, VC44C, VC416C, VC464C, STS1, STS3C, STS12C, STS48C and STS192C: Quality of service, {rr} CS, TCA where rr is equal to the signal rate
  - For terminated VC4 and STS1signals: Quality of service, {rr} CS, TCA where rr is equal to the Constituent Signal (CS) rate
  - For GE port: Quality of service, GE, TCA
  - For VCG port: Quality of service, VCG, TCA.

5. **condtype** – Condition Type  
This parameter identifies the type of event indication being reported.  
Type: inner string with the Format: T-<montype>.  
Range:  
The following values are for all OC signals: T-CVS, T-ESS, T-SESS, T-SEFS-S, T-CVL, T-ESL, T-SESL, T-UASL, T-CV-LFE, T-ES-LFE, T-SES-LFE, T-UAS-LFE.  
The following values are also for OC192 and OC768 signals: T-FECC-L.  
The following values are for STS1 (path) and are also applicable to STS3C, STS12C, STS48C and STS192C tributaries: T-CVP, T-ESP, T-SESP, T-UASP, T-CV-PFE, T-ES-PFE, T-SES-PFE, T-UAS-PFE.  
The following values are for all STM signals: T-RS-N-ES, T-RS-N-SES, T-RS-N-BBE, T-RS-N-UAS, T-MS-N-ES, T-MS-N-SES, T-MS-N-BBE, T-MS-N-UAS, T-MS-F-ES, T-MS-F-SES, T-MS-F-BBE, T-MS-F-UAS.  
The following values also are for STM64 and STM256 signals: T-MS-N-FECC.  
The following values are for VC3, VC4, VC44C, VC416C and VC464C tributaries: T-VC-N-ES, T-VC-N-SES, T-VC-N-BBE, T-VC-N-UAS, T-VC-F-ES, T-VC-F-SES, T-VC-F-BBE, T-VC-F-UAS.  
For ENET signals: T-PDE.
6. **ocrdat** – Occurrence Date  
Refer to the definition of the **ocrdat** parameter in the Output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
7. **ocrtm** – Occurrence Time  
Refer to the definition of the **ocrtm** parameter in the Output parameters section of the “RTRV-ALM: Retrieve alarm” (6-30) command.
8. **thlev** – Threshold Level  
See definition in “REPT EVT: Report event” (6-47).
9. **tmper** – Time Period  
See definition in “REPT EVT: Report event” (6-47).

**Example input/output**

TCA alarm for an STS-1 SES of slot 14 for port 3 STS-12 (24h register):

```
UNITE-NE 00-01-01 08:00:50
A 009 REPT EVT STS1
"1-1-#-#-14-3-2:T-SESP,TC,01-10,08-00-49,,,,,250,1-
DAY:\\"Quality of service, STS1 CS, TCA\\""
;
```



# TCA Profile

## Overview

---

**Purpose** This section contains the TL1 interlave definitions listed below.

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## TCA Profile

---

**General** The threshold settings for the different PM parameters supporting thresholding is provisionable by means of TCA profiles. The profiles of a certain type contains all pm parameters related to a certain entity supporting enabling/disabling of performance monitoring. Therefore the following profiles types are defined:

- SECTION-LINE - used/referenced by SONET port entities
- RS-MS - used/referenced by SDH port entities
- PATH - used/referenced by SONET tributary entities
- HO-VC - used/referenced by SDH tributary entities
- ENET - used/referenced by Ethernet port entities.

All threshold data of one certain profile type is sometimes also called a profile image. This term may be used in other TCA profiles commands as parameter name. It is then used as an alias for all PM thresholds parameters of the corresponding profile type.

TCA suppression can be provisioned by means of setting the corresponding profile parameter to zero.

The system supports two default sets of profiles for each type of TCA profile. One set of default profiles shall contain zero threshold value for each parameter in the profile. Another set of default profiles contains real non-zero threshold value for each parameter in the profile. The name of the zero threshold value default profile shall be "Default0" and the name of the non-zero threshold value default profile shall be "Default".

The number of TCA profiles are limited to a specific number per profile type. This number also includes the system default profiles.

The maximum numbers are for:

- 80 for PATH SDH and PATH SONET together
- 30 for RSMS SDH and section/line SONET together
- 10 for ENET.

The user is able to change the threshold values of the non-zero default profile, but will not be allowed to change its name. The user is not allowed to change the name or the threshold values of the zero default profile.

All the profile pointers are pointed to zero threshold value default profiles when the ports are provisioned. That is, thresholding is not performed as a default. All the profile pointers are pointed to non-zero threshold value default profiles when thresholding is to be performed.

Threshold parameters names are defined using the following pattern:

<bintype>[rtr]<montype><port/trib rate/porttype> with:

- bintype = day (for 24h) or qh (for 15 Min)
- [rtr] = rtr is inserted if the clear threshold is mentioned
- montype = montype as defined in RTRV-PM command
- portrate = oc3, oc12, oc48, oc192, oc768 or stm1, stm4, stm16, stm64, stm256
- trib rate = sts1, sts3c, sts12c, sts48c, sts192c or vc3, vc4, vc44c, vc416c, vc464c
- porttype = ge, vcg.



## RTRV-TCA-PROF: Retrieve TCA Profile

---

**General** The RTRV-TCA-PROF command allows the user to retrieve either a list of profile names that have been created for a specific profile type or the contents of a profile whose type and name are given in this command. The system supports two default sets of profiles called "DEFAULT" and "DEFAULT0".

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): PM1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax:  
RTRV-TCA-PROF:*tid::ctag::pftype*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
See definition in "RTRV-HDR: Retrieve header" (5-8).
2. **ctag** – Correlation Tag  
See definition in "RTRV-HDR: Retrieve header" (5-8).
3. **pftype** – Profile Type  
This indicates the type of PM TCA profile for the selected facility.  
Type: value set.  
Range: SECTION-LINE, RS-MS, HOVC, PATH, ENET.
4. **pfname** – Profile Name  
This indicates the name of the PM TCA profile which was already established by the command ENT-TCA-PROF. If this field is NULL, the output will only consist of a list of all profile names for the specific profile type that was requested. If a valid profile name is inserted in this field, the output will display the parameters within the profile with their values. A *pfname* value will always uniquely identify an existing profile for a specified *pftype* value. NULL means, that the Profile Name is omitted.  
Type: alphanumeric string.

Range: This is an alphanumeric character string with a maximum of 24 characters.

Default: If this field is NULL, the output will only consist of a list of all profile names for the specific profile type that was requested.

**Output format** If the system receives this command and the profile name is NULL, the following response is returned:

```
sid date time
M ctag COMPLD
  "pftype:pfname"
  "pftype:pfname"
  "pftype:pfname"
.      .      .      .      .      .
.      .      .      .      .      .
;
```

If the system receives this command with a valid profile name, the following response is returned:

```
sid date time
M ctag COMPLD
  "pftype,pfname:spec_block"
;
```

The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of "RTRV-HDR: Retrieve header" (5-8).

## Output parameters

### Command parameters - general profile

1. pftype – Profile Type  
See definition in input parameter section.

**Command parameters - profile parameters of type SECTION-LINE**

1. qhcvsoc3  
15-minute CV-S bin for OC-3.  
Type: integer  
Range: 0-57599100  
Default: 140.
2. daycvsoc3  
Day CV-S bin for OC-3.  
Type: integer  
Range: 0-4294967295  
Default: 1344.
3. qhcvsoc12  
15-minute CV-S bin for OC-12.  
Type: integer  
Range: 0-57599100  
Default: 560.
4. daycvsoc12  
Day CV-S bin for OC-12.  
Type: integer  
Range: 0-4294967295  
Default: 5376.
5. qhcvsoc48  
15-minute CV-S bin for OC-48.  
Type: integer  
Range: 0-57599100  
Default: 2240.
6. daycvsoc48  
Day CV-S bin for OC-48.  
Type: integer  
Range: 0-4294967295  
Default: 21504.
7. qhcvsoc192  
15-minute CV-S bin for OC-192.  
Type: integer  
Range: 0-57599100  
Default: 8960.

## RTRV-TCA-PROF: Retrieve TCA Profile

8. daycvsoc192  
Day CV-S bin for OC-192.  
Type: integer  
Range: 0-4294967295  
Default: 86016.
9. qhcvsoc768  
15-minute CV-S bin for OC-768.  
Type: integer  
Range: 0-57599100  
Default: 35840.
10. daycvsoc768  
Day CV-S bin for OC-768.  
Type: integer  
Range: 0-4294967295  
Default: 344064.
11. qhess  
15-minute ES-S bin.  
Type: integer  
Range: 0-900  
Default: 25.
12. dayess  
Day ES-S bin.  
Type: integer  
Range: 0-86400  
Default: 250.
13. qhsess  
15-minute SES-S bin.  
Type: integer  
Range: 0-810  
Default: 10.
14. daysess  
Day ES-S bin.  
Type: integer  
Range: 0-77760  
Default: 40.

15. qhsefss  
15-minute SEFS-S bin.  
Type: integer  
Range: 0-900  
Default: 5.
16. daysefss  
Day SEFS-S bin.  
Type: integer  
Range: 0-86400  
Default: 10.
17. qhcvloc3  
15-minute CV-L and CV-LFE bin for OC-3.  
Type: integer  
Range: 0-172799100  
Default: 140.
18. daycvloc3  
Day CV-L bin and CV-LFE for OC-3.  
Type: integer  
Range: 0-4294967295  
Default: 1344.
19. qhcvloc12  
15-minute CV-L and CV-LFE bin for OC-12.  
Type: integer  
Range: 0-691199100  
Default: 560.
20. daycvloc12  
Day CV-L bin and CV-LFE for OC-12.  
Type: integer  
Range: 0-4294967295  
Default: 5376.
21. qhcvloc48  
15-minute CV-L and CV-LFE bin for OC-48.  
Type: integer  
Range: 0-4294967295  
Default: 2240.

- 22. daycvloc48  
Day CV-L and CV-LFE bin for OC-48.  
Type: integer  
Range: 0-4294967295  
Default: 21504.
- 23. qhcvloc192  
15-minute CV-L and CV-LFE bin for OC-192.  
Type: integer  
Range: 0-4294967295  
Default: 8960.
- 24. daycvloc192  
Day CV-L and CV-LFE bin for OC-192.  
Type: integer  
Range: 0-4294967295  
Default: 86016.
- 25. qhcvloc768  
15-minute CV-L and CV-LFE bin for OC-768.  
Type: integer  
Range: 0-4294967295  
Default: 35840.
- 26. daycvloc768  
Day CV-L and CV-LFE bin for OC-768.  
Type: integer  
Range: 0-4294967295  
Default: 344064.
- 27. qhesl  
15-minute ES-L and ES-LFE bin.  
Type: integer  
Range: 0-900  
Default: 25.
- 28. dayesl  
Day ES-L and ES-LFE bin.  
Type: integer  
Range: 0-86400  
Default: 250.



- 29. qhfeccloc192  
15-minute FECC-L bin for OC-192.  
Type: integer  
Range: 0 - 4294967295  
Default: 5184.
- 30. dayfeccloc192  
Day FECC-L bin for OC-192.  
Type: integer  
Range: 0 - 4294967295  
Default: 497644.
- 31. qhfeccloc768  
15-minute FECC-L bin for OC-768.  
Type: integer  
Range: 0 - 4294967295  
Default: 20736.
- 32. dayfeccloc768  
Day FECC-L bin for OC-768.  
Type: integer  
Range: 0 - 4294967295  
Default: 1990656.
- 33. qhsesl  
15-minute SES-L and SES-LFE bin.  
Type: integer  
Range: 0-810  
Default: 10.
- 34. daysesl  
Day SES-L and SES-LFE bin.  
Type: integer  
Range: 0-77760  
Default: 40.

35. qhuasl  
15-minute UAS-L and UAS-LFE bin.  
Type: integer  
Range: 0-900  
Default: 10.
36. dayuasl  
Day UAS-L and UAS-LFE bin.  
Type: integer  
Range: 0-86400  
Default: 10.

**Command parameters - profile parameters of type RS-MS**

1. qhrsnbbe  
15-minute RS\_N\_BBE bin.  
Type: integer  
Range: 0-7199100  
Default: 9000.
2. daysrbbe  
Day RS\_N\_BBE bin.  
Type: integer  
Range: 0-691113600  
Default: 48000.
3. qhrsnes  
15-minute RS\_N\_ES bin.  
Type: integer  
Range: 0-900  
Default: 180.
4. daysnes  
Day RS\_N\_ES bin.  
Type: integer  
Range: 0-86400  
Default: 1500.
5. qhrsnes  
15-minute RS\_N\_SES bin.  
Type: integer  
Range: 0-810  
Default: 15.

6. daysnses  
Day RS\_N\_SES bin.  
Type: integer  
Range: 0-77760  
Default: 20.
7. qhrsnuas  
15-minute RS\_N\_UAS bin.  
Type: integer  
Range: 0-900  
Default: 15.
8. daysnuas  
Day RS\_N\_UAS bin.  
Type: integer  
Range: 0-86400  
Default: 20.
9. qhmsbbestm1  
15-min MS\_N\_BBE and MS\_F\_BBE for stm1 bin.  
Type: integer  
Range: 0-172799100  
Default: 228000.
10. daysbbestm1  
Day MS\_N\_BBE and MS\_F\_BBE for stm1 bin.  
Type: integer  
Range: 0-4294967295  
Default: 432000.
11. qhmsbbestm4  
15-min MS\_N\_BBE and MS\_F\_BBE for stm4 bin.  
Type: integer  
Range: 0-691199100  
Default: 912000.
12. daysbbestm4  
Day MS\_N\_BBE and MS\_F\_BBE for stm4 bin.  
Type: integer  
Range: 00-4294967295  
Default: 1728000.

13. qhmsbbestm16  
15-min MS\_N\_BBE and MS\_F\_BBE for stm16 bin.  
Type: integer  
Range: 0-2764799100  
Default: 3648000.
14. daymsbbestm16  
Day MS\_N\_BBE and MS\_F\_BBE for stm16 bin.  
Type: integer  
Range: 0-4294967295  
Default: 6912000.
15. qhmsbbestm64  
15-min MS\_N\_BBE and MS\_F\_BBE for stm64 bin.  
Type: integer  
Range: 0-4294967295  
Default: 14592000.
16. daymsbbestm64  
Day MS\_N\_BBE and MS\_F\_BBE for stm64 bin.  
Type: integer  
Range: 0-4294967295  
Default: 27648000.
17. qhmsbbestm256  
15-min MS\_N\_BBE and MS\_F\_BBE for stm256 bin.  
Type: integer  
Range: 0-4294967295  
Default: 58368000.
18. daymsbbestm256  
Day MS\_N\_BBE and MS\_F\_BBE for stm256 bin.  
Type: integer  
Range: 0-4294967295  
Default: 110592000.
19. qhmses  
15-minute MS\_N\_ES and MS\_F\_ES bin.  
Type: integer  
Range: 0-900  
Default: 50.

20. daymses  
Day MS\_N\_ES and MS\_F\_ES bin.  
Type: integer  
Range: 0-86400  
Default: 150.
21. qhmsnfecdstm64  
15-minute MS-N-FECC bin forSTM-64.  
Type: integer  
Range: 0 - 4294967295  
Default: 5184.
22. daymsnfecdstm64  
Day MS-N-FECC bin forSTM-64.  
Type: integer  
Range: 0 - 4294967295  
Default: 49764.
23. qhmsnfecdstm256  
15-minute MS-N-FECC bin forSTM-256.  
Type: integer  
Range: 0 - 4294967295  
Default: 20736.
24. daymsnfecdstm256  
Day MS-N-FECC bin forSTM-256.  
Type: integer  
Range: 0 - 4294967295  
Default: 1990656.
25. qhmsses  
15-minute MS\_N\_SES and MS\_F\_SES bin.  
Type: integer  
Range: 0-810  
Default: 10.
26. daymsses  
Day MS\_N\_SES and MS\_F\_SES bin.  
Type: integer  
Range: 0-77760  
Default: 15.

27. qhmsuas  
15-min MS\_N\_UAS and MS\_F\_UAS for stm64 bin.  
Type: integer  
Range: 0-900  
Default: 15.
28. daymsuas  
Day MS\_N\_UAS and MS\_F\_UAS for stm64 bin.  
Type: integer  
Range: 0-86400  
Default: 20.

**Command parameters - reset profile parameters of type RS-MS**

1. qhrtrrsnbbe  
15-minute reset threshold for RS\_N\_BBE bin.  
Type: integer  
Range: 0-7199100  
Default: 200.
2. dayrtrrsnbbe  
Day reset threshold for RS\_N\_BBE bin.  
Type: integer  
Range: 0-691113600  
Default: 4800.
3. qhrtrrsnes  
15-minute reset threshold for RS\_N\_ES bin.  
Type: integer  
Range: 0-900  
Default: 20.
4. dayrtrrsnes  
Day reset threshold for RS\_N\_ES bin.  
Type: integer  
Range: 0-86400  
Default: 150.
5. qhrtrrsnes  
15-minute reset threshold for RS\_N\_SES bin.  
Type: integer  
Range: 0-810  
Default: 0.

6. dayrtrrsnses  
Day reset threshold for RS\_N\_SES bin.  
Type: integer  
Range: 0-77760  
Default: 0.
7. qhrtrrsnuas  
15-minute reset threshold for RS\_N\_UAS bin.  
Type: integer  
Range: 0-900  
Default: 0.
8. dayrtrrsnuas  
Day reset threshold for RS\_N\_UAS bin.  
Type: integer  
Range: 0-86400  
Default: 0.
9. qhrtrmsbbestm1  
15-min MS\_N\_BBE and MS\_F\_BBE for stm1 bin.  
Type: integer  
Range: 0-172799100  
Default: 2400.
10. dayrtrmsbbestm1  
Day reset threshold for MS\_N\_BBE and MS\_F\_BBE for stm1 bin.  
Type: integer  
Range: 0-4294967295  
Default: 43200.
11. qhrtrmsbbestm4  
15-min MS\_N\_BBE and MS\_F\_BBE for stm4 bin.  
Type: integer  
Range: 0-691199100  
Default: 9600.
12. dayrtrmsbbestm4  
Day reset threshold for MS\_N\_BBE and MS\_F\_BBE for stm4 bin.  
Type: integer  
Range: 0-4294967295  
Default: 172800.

13. qhrtrmsbbestm16  
15-min MS\_N\_BBE and MS\_F\_BBE for stm16 bin.  
Type: integer  
Range: 0-2764799100  
Default: 38400.
14. dayrtrmsbbestm16  
Day reset threshold for MS\_N\_BBE and MS\_F\_BBE for stm16 bin.  
Type: integer  
Range: 0-4294967295  
Default: 691200.
15. qhrtrmsbbestm64  
15-min MS\_N\_BBE and MS\_F\_BBE for stm64 bin.  
Type: integer  
Range: 0-4294967295  
Default: 153600.
16. dayrtrmsbbestm64  
Day reset threshold for MS\_N\_BBE and MS\_F\_BBE for stm64 bin.  
Type: integer  
Range: 0-4294967295  
Default: 2764800.
17. qhrtrmsbbestm256  
15-min MS\_N\_BBE and MS\_F\_BBE for stm256 bin.  
Type: integer  
Range: 0-4294967295  
Default: 614400.
18. dayrtrmsbbestm256  
Day reset threshold for MS\_N\_BBE and MS\_F\_BBE for stm256 bin.  
Type: integer  
Range: 0-4294967295  
Default: 11059200.
19. qhrtrmses  
15-minute reset threshold for MS\_N\_ES and MS\_F\_ES bin.  
Type: integer  
Range: 0-900  
Default: 5.



20. daytrmses  
Day reset threshold for MS\_N\_ES and MS\_F\_ES bin.  
Type: integer  
Range: 0-86400  
Default: 15.
21. qhrtrmsnfecdstm64  
15-minute reset threshold for MS-N-FECC bin forSTM-64.  
Type: integer  
Range: 0 - 4294967295  
Default: 0.
22. daytrmsnfecdstm64  
Day reset threshold for MS-N-FECC bin forSTM-64.  
Type: integer  
Range: 0 - 4294967295  
Default: 0.
23. qhrtrmsnfecdstm256  
15-minute reset threshold for MS-N-FECC bin forSTM-256.  
Type: integer  
Range: 0 - 4294967295  
Default: 0.
24. daytrmsnfecdstm256  
Day reset threshold for MS-N-FECC bin forSTM-256.  
Type: integer  
Range: 0 - 4294967295  
Default: 0.
25. qhrtrmses  
15-minute reset threshold for MS\_N\_SES and MS\_F\_SES bin.  
Type: integer  
Range: 0-810  
Default: 0.
26. daytrmses  
Day reset threshold for MS\_N\_SES and MS\_F\_SES bin.  
Type: integer  
Range: 0-77760  
Default: 0.

27. qhrtrmsuas  
15-min reset threshold for MS\_N\_UAS and MS\_F\_UAS.  
Type: integer  
Range: 0-900  
Default: 0.
28. dayrtrmsuas  
Day reset threshold for MS\_N\_UAS and MS\_F\_UAS.  
Type: integer  
Range: 0-86400  
Default: 0.

**Command parameters - profile parameters of type HO-VC**

1. qhvcbbev3  
15-minute VC\_N\_BBE and VC\_F\_BBE for VC3 bin.  
Type: integer  
Range: 0-7199100  
Default: 36000.
2. dayvcbbev3  
Day VC\_N\_BBE and VC\_F\_BBE for VC3 bin.  
Type: integer  
Range: 0-691113600  
Default: 48000.
3. qhvcbbev4  
15-minute VC\_N\_BBE and VC\_F\_BBE for VC4 bin.  
Type: integer  
Range: 0-7199100  
Default: 36000.
4. dayvcbbev4  
Day VC\_N\_BBE and VC\_F\_BBE for VC4 bin.  
Type: integer  
Range: 0-691113600  
Default: 48000.
5. qhvcbbev44c  
15-minute VC\_N\_BBE and VC\_F\_BBE for VC44C bin.  
Type: integer  
Range: 0-7199100  
Default: 36000.

6. dayvcbbbev44c  
Day VC\_N\_BBE and VC\_F\_BBE for VC44C bin.  
Type: integer  
Range: 0-691113600  
Default: 48000.
7. qhvcbbbev416c  
15-minute VC\_N\_BBE and VC\_F\_BBE for VC416C bin.  
Type: integer  
Range: 0-7199100  
Default: 36000.
8. dayvcbbbev416c  
Day VC\_N\_BBE and VC\_F\_BBE for VC416C bin.  
Type: integer  
Range: 0-691113600  
Default: 48000.
9. qhvcbbbev464c  
15-minute VC\_N\_BBE and VC\_F\_BBE for VC464C bin.  
Type: integer  
Range: 0-7199100  
Default: 36000.
10. dayvcbbbev464c  
Day VC\_N\_BBE and VC\_F\_BBE for VC464C bin.  
Type: integer  
Range: 0-691113600  
Default: 48000.
11. qhvcsv3  
15-minute VC\_N\_ES and VC\_F\_ES VC3 bin.  
Type: integer  
Range: 0-900  
Default: 150.
12. dayvcsv3  
Day VC\_N\_ES and VC\_F\_ES VC3 bin.  
Type: integer  
Range: 0-86400  
Default: 600.

13. qhvcesvc4  
15-minute VC\_N\_ES and VC\_F\_ES for VC4 bin.  
Type: integer  
Range: 0-900  
Default: 180.
14. dayvcesvc4  
Day VC\_N\_ES and VC\_F\_ES for VC4 bin.  
Type: integer  
Range: 0-86400  
Default: 1500.
15. qhvcesvc44c  
15-minute VC\_N\_ES and VC\_F\_ES for VC4-4C bin.  
Type: integer  
Range: 0-900  
Default: 180.
16. dayvcesvc44c  
Day VC\_N\_ES and VC\_F\_ES for VC4-4C bin.  
Type: integer  
Range: 0-86400  
Default: 1500.
17. qhvcesvc416c  
15-minute VC\_N\_ES and VC\_F\_ES for VC4-16C bin.  
Type: integer  
Range: 0-900  
Default: 180.
18. dayvcesvc416c  
Day VC\_N\_ES and VC\_F\_ES for VC4-16C bin.  
Type: integer  
Range: 0-86400  
Default: 1500.
19. qhvcesvc464c  
15-minute VC\_N\_ES and VC\_F\_ES for VC4-64C bin.  
Type: integer  
Range: 0-900  
Default: 180.

20. dayvcsv464c  
Day VC\_N\_ES and VC\_F\_ES for VC4-64C bin.  
Type: integer  
Range: 0-86400  
Default: 1500.
21. qhvcsesvc3  
15-minute VC\_N\_SES and VC\_F\_SES for VC3 bin.  
Type: integer  
Range: 0-810  
Default: 15.
22. dayvcsv3  
Day VC\_N\_SES and VC\_F\_SES for VC3 bin.  
Type: integer  
Range: 0-77760  
Default: 20.
23. qhvcsesvc4  
15-minute VC\_N\_SES and VC\_F\_SES for VC4 bin.  
Type: integer  
Range: 0-810  
Default: 15.
24. dayvcsv4  
Day VC\_N\_SES and VC\_F\_SES for VC4 bin.  
Type: integer  
Range: 0-77760  
Default: 20.
25. qhvcsesvc44c  
15-minute VC\_N\_SES and VC\_F\_SES for VC44C bin.  
Type: integer  
Range: 0-810  
Default: 15.
26. dayvcsv44c  
Day VC\_N\_SES and VC\_F\_SES for VC44C bin.  
Range: 0-77760  
Default: 20.
27. qhvcsesvc416c  
15-minute VC\_N\_SES and VC\_F\_SES for VC416C bin.  
Type: integer  
Range: 0-810  
Default: 15.

- 28. dayvcsevc416c  
Day VC\_N\_SES and VC\_F\_SES for VC416C bin.  
Type: integer  
Range: 0-77760  
Default: 20.
- 29. qhvcsevc464c  
15-minute VC\_N\_SES and VC\_F\_SES for VC464C bin.  
Type: integer  
Range: 0-810  
Default: 15.
- 30. dayvcsevc464c  
Day VC\_N\_SES and VC\_F\_SES for VC464C bin.  
Type: integer  
Range: 0-77760  
Default: 20.
- 31. qhvcuasvc3  
15-minute VC\_N\_UAS and VC\_F\_UAS for VC3 bin.  
Type: integer  
Range: 0-900  
Default: 15.
- 32. dayvcuasvc3  
Day VC\_N\_UAS and VC\_F\_UAS for VC3 bin.  
Type: integer  
Range: 0-86400  
Default: 20.
- 33. qhvcuasvc4  
15-minute VC\_N\_UAS and VC\_F\_UAS for VC4 bin.  
Type: integer  
Range: 0-900  
Default: 15.
- 34. dayvcuasvc4  
Day VC\_N\_UAS and VC\_F\_UAS for VC4 bin.  
Type: integer  
Range: 0-86400  
Default: 20.

35. qhvcuasvc44c  
15-minute VC\_N\_UAS and VC\_F\_UAS for VC44C bin.  
Type: integer  
Range: 0-900  
Default: 15.
36. dayvcuasvc44c  
Day VC\_N\_UAS and VC\_F\_UAS for VC44C bin.  
Type: integer  
Range: 0-86400  
Default: 20.
37. qhvcuasvc416c  
15-minute VC\_N\_UAS and VC\_F\_UAS for VC416C bin.  
Type: integer  
Range: 0-900  
Default: 15.
38. dayvcuasvc416c  
Day VC\_N\_UAS and VC\_F\_UAS for VC416C bin.  
Type: integer  
Range: 0-86400  
Default: 20.
39. qhvcuasvc464c  
15-minute VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-900  
Default: 15.
40. dayvcuasvc464c  
Day VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-86400  
Default: 20.
41. qhpjcpes  
15-minute positive PJC bin.  
Type: integer  
Range: 0-1800000  
Default: 30.

- 42. daypjcp  
Day positive PJC bin.  
Type: integer  
Range: 0-172800000  
Default: 2880.
- 43. qhpjcneg  
15-minute negative PJC bin.  
Type: integer  
Range: 0-1800000  
Default: 30.
- 44. daypjcneg  
Day negative PJC bin.  
Type: integer  
Range: 0-172800000  
Default: 2880.

**Command parameters - reset profile parameters of type HO-VC**

- 1. qhrtrvcbbbev3  
15-minute reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC3 bin.  
Type: integer  
Range: 0-7199100  
Default: 200.
- 2. dayrtrvcbbbev3  
Day reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC3 bin.  
Type: integer  
Range: 0-691113600  
Default: 4800.
- 3. qhrtrvcbbbev4  
15-minute reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC4 bin.  
Type: integer  
Range: 0-7199100  
Default: 200.



4. dayrtrvcbbevc4  
Day reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC4 bin.  
Type: integer  
Range: 0-691113600  
Default: 4800.
5. qhrtrvcbbevc44c  
15-minute reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC44C bin.  
Type: integer  
Range: 0-7199100  
Default: 200.
6. dayrtrvcbbevc44c  
Day reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC44C bin.  
Type: integer  
Range: 0-691113600  
Default: 4800.
7. qhrtrvcbbevc416c  
15-minute reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC416C bin.  
Type: integer  
Range: 0-7199100  
Default: 200.
8. dayrtrvcbbevc416c  
Day reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC416C bin.  
Type: integer  
Range: 0-691113600  
Default: 4800.
9. qhrtrvcbbevc464c  
15-minute reset threshold for VC\_N\_BBE and VC\_F\_BBE for VC464C bin.  
Type: integer  
Range: 0-7199100  
Default: 200.

## RTRV-TCA-PROF: Retrieve TCA Profile

10. dayrtrvcbbbev464c  
dayrtrvcbbbev464c  
Type: integer  
Range: 0-691113600  
Default: 4800.
11. qhrtrvcsv3  
15-minute reset threshold for VC\_N\_ES and VC\_F\_ES VC3 bin.  
Type: integer  
Range: 0-900  
Default: 10.
12. dayrtrvcsv3  
Day reset threshold for VC\_N\_ES and VC\_F\_ES VC3 bin.  
Type: integer  
Range: 0-86400  
Default: 60.
13. qhrtrvcsv4  
15-minute reset threshold for VC\_N\_ES and VC\_F\_ES for VC4 bin.  
Type: integer  
Range: 0-900  
Default: 20.
14. dayrtrvcsv4  
Day reset threshold for VC\_N\_ES and VC\_F\_ES for VC4 bin.  
Type: integer  
Range: 0-86400  
Default: 150.
15. qhrtrvcsv44c  
15-minute reset threshold for VC\_N\_ES and VC\_F\_ES for VC4-4C bin.  
Type: integer  
Range: 0-900  
Default: 20.
16. dayrtrvcsv44c  
Day reset threshold for VC\_N\_ES and VC\_F\_ES for VC4-4C bin.  
Type: integer  
Range: 0-86400  
Default: 150.

17. qhrtrvcsvc416c  
15-minute reset threshold for VC\_N\_ES and VC\_F\_ES for VC4-16C bin.  
Type: integer  
Range: 0-900  
Default: 20.
18. dayrtrvcsvc416c  
Day reset threshold for VC\_N\_ES and VC\_F\_ES for VC4-16C bin.  
Type: integer  
Range: 0-86400  
Default: 150.
19. qhrtrvcsvc464c  
15-minute reset threshold for VC\_N\_ES and VC\_F\_ES for VC4-64C bin.  
Type: integer  
Range: 0-900  
Default: 20.
20. dayrtrvcsvc464c  
Day reset threshold for VC\_N\_ES and VC\_F\_ES for VC4-64C bin.  
Type: integer  
Range: 0-86400  
Default: 150.
21. qhrtrvcsvc3  
15-minute reset threshold for VC\_N\_SES and VC\_F\_SES for VC3 bin.  
Type: integer  
Range: 0-810  
Default: 0.
22. dayrtrvcsvc3  
Day reset threshold for VC\_N\_SES and VC\_F\_SES for VC3 bin.  
Type: integer  
Range: 0-77760  
Default: 0.

23. qhrtrvcsv4  
15-minute reset threshold for VC\_N\_SES and VC\_F\_SES for VC4 bin.  
Type: integer  
Range: 0-810  
Default: 0.
24. dayrtrvcsv4  
Day reset threshold for VC\_N\_SES and VC\_F\_SES for VC4 bin.  
Type: integer  
Range: 0-77760  
Default: 0.
25. qhrtrvcsv44c  
15-minute reset threshold for VC\_N\_SES and VC\_F\_SES for VC44C bin.  
Type: integer  
Range: 0-810  
Default: 0.
26. dayrtrvcsv44c  
Day reset threshold for VC\_N\_SES and VC\_F\_SES for VC44C bin.  
Type: integer  
Range: 0-77760  
Default: 0.
27. qhrtrvcsv416c  
15-minute reset threshold for VC\_N\_SES and VC\_F\_SES for VC416C bin.  
Type: integer  
Range: 0-810  
Default: 0.
28. dayrtrvcsv416c  
Day reset threshold for VC\_N\_SES and VC\_F\_SES for VC416C bin.  
Type: integer  
Range: 0-77760  
Default: 0.

29. qhrtrvcsv464c  
15-minute reset threshold for VC\_N\_SES and VC\_F\_SES for VC464C bin.  
Type: integer  
Range: 0-810  
Default: 0.
30. dayrtrvcsv464c  
Day reset threshold for VC\_N\_SES and VC\_F\_SES for VC464C bin.  
Type: integer  
Range: 0-77760  
Default: 0.
31. qhrtrvcu464c  
15-minute reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-900  
Default: 0.
32. dayrtrvcu464c  
Day reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-86400  
Default: 0.
33. qhrtrvcu464c  
15-minute reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-900  
Default: 0.
34. dayrtrvcu464c  
Day reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-86400  
Default: 0.

- 35. qhrtrvcuasvc44c  
15-minute reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC44C bin.  
Type: integer  
Range: 0-900  
Default: 0.
- 36. dayrtrvcuasvc44c  
Day reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC44C bin.  
Type: integer  
Range: 0-86400  
Default: 0.
- 37. qhrtrvcuasvc416c  
15-minute reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC416C bin.  
Type: integer  
Range: 0-900  
Default: 0.
- 38. dayrtrvcuasvc416c  
Day reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC416C bin.  
Type: integer  
Range: 0-86400  
Default: 0.
- 39. qhrtrvcuasvc464c  
15-minute reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-900  
Default: 0.
- 40. dayrtrvcuasvc464c  
Day reset threshold for VC\_N\_UAS and VC\_F\_UAS for VC464C bin.  
Type: integer  
Range: 0-86400  
Default: 0.

41. qhrtrpjcpo  
15-minute reset threshold for positive PJC bin.  
Type: integer  
Range: 0-1800000  
Default: 0.
42. dayrtrpjcpo  
Day reset threshold for positive PJC bin.  
Type: integer  
Range: 0-172800000  
Default: 0.
43. qhrtrpjcneg  
15-minute reset threshold for negative PJC bin.  
Type: integer  
Range: 0-1800000  
Default: 0.
44. dayrtrpjcneg  
Day reset threshold for negative PJC bin.  
Type: integer  
Range: 0-172800000  
Default: 0.

**Command parameters - profile parameters of type PATH**

1. qhcvpsts1  
15-minute CV-P and CV-PFE bin for STS1.  
Type: integer  
Range: 0-57599100  
Default: 15.
2. daycvpsts1  
Day CV-P and CV-PFE bin for STS1.  
Type: integer  
Range: 0-4294967295  
Default: 125.
3. qhcvpsts3c  
15-minute CV-P and CV-PFE bin for STS3C.  
Type: integer  
Range: 0-57599100  
Default: 25.

4. daycvpsts3c  
Day CV-P and CV-PFE bin for STS3C.  
Type: integer  
Range: 4294967295  
Default: 250.
5. qhcvpsts12c  
15-minute CV-P and CV-PFE bin for STS12C.  
Type: integer  
Range: 0-57599100  
Default: 75.
6. daycvpsts12c  
Day CV-P and CV-PFE bin for STS12C.  
Type: integer  
Range: 4294967295  
Default: 750.
7. qhcvpsts48c  
15-minute CV-P and CV-PFE bin for STS48C.  
Type: integer  
Range: 0-57599100  
Default: 300.
8. daycvpsts48c  
Day CV-P and CV-PFE bin for STS48C.  
Type: integer  
Range: 4294967295  
Default: 3000.
9. qhcvpsts192c  
Day CV-P and CV-PFE bin for STS192C.  
Type: integer  
Range: 0-57599100  
Default: 1200.
10. daycvpsts192c  
Day CV-P and CV-PFE bin for STS192C.  
Type: integer  
Range: 0-4294967295  
Default: 12000.



11. qhesps1  
15-minute ES-P and ES-PFE bin for STS1.  
Type: integer  
Range: 0-900  
Default: 12.
12. dayesp1  
Day ES-P and ES-PFE bin for STS1.  
Type: integer  
Range: 0-86400  
Default: 100.
13. qhesps3c  
15-minute ES-P and ES-PFE bin for STS3C.  
Type: integer  
Range: 0-900  
Default: 20.
14. dayesp3c  
Day ES-P and ES-PFE bin for STS3C.  
Type: integer  
Range: 0-86400  
Default: 200.
15. qhesps12c  
15-minute ES-P and ES-PFE bin for STS12C.  
Type: integer  
Range: 0-900  
Default: 60.
16. dayesp12c  
Day ES-P and ES-PFE bin for STS12C.  
Type: integer  
Range: 0-86400  
Default: 600.
17. qhesps48c  
15-minute ES-P and ES-PFE bin for STS48C.  
Type: integer  
Range: 0-900  
Default: 240.

18. dayespsts48c  
Day ES-P and ES-PFE bin for STS48C.  
Type: integer  
Range: 0-86400  
Default: 2400.
19. qhespsts192c  
Day ES-P and ES-PFE bin for STS192C.  
Type: integer  
Range: 0-900  
Default: 240.
20. dayespsts192c  
Day ES-P and ES-PFE bin for STS192C.  
Type: integer  
Range: 0-86400  
Default: 9600.
21. qhsesp  
15-minute SES-P and SES-PFE bin.  
Type: integer  
Range: 0-810  
Default: 3.
22. daysesp  
Day SES-P and SES-PFE bin.  
Type: integer  
Range: 0-77760  
Default: 7.
23. qhuasp  
15-minute UAS-P and UAS-PFE bin.  
Type: integer  
Range: 0-900  
Default: 10.
24. dayuasp  
Day UAS-P and UAS-PFE bin.  
Type: integer  
Range: 0-86400  
Default: 10.

25. qhppjcgen  
15-minute PPJC-PGen bin.  
Type: integer  
Range: 0-1800000  
Default: 30.
26. dayppjcgen  
Day PPJC-PGen bin.  
Range: 0-172800000  
Default: 2880.
27. qhnpjcgen  
15-minute NPJC-PGen bin.  
Type: integer  
Range: 0-1800000  
Default: 30.
28. daynpjcgen  
Day NPJC-PGen bin.  
Type: integer  
Range: 0-172800000  
Default: 2880.
29. qhppjcgdet  
15-minute PPJC-PDet bin.  
Type: integer  
Range: 0-1800000  
Default: 30.
30. dayppjcdet  
Day PPJC-PDet bin.  
Type: integer  
Range: 0-172800000  
Default: 2880.
31. qhnpjcdet  
15-minute NPJC-PDet bin.  
Type: integer  
Range: 0-1800000  
Default: 30.
32. daynpjcdet  
Day NPJC-PDet bin.  
Type: integer  
Range: 0-172800000  
Default: 2880.

**Command parameters - profile parameters of type ENET**

1. qhpdege  
15-minute PDE bin for GE.  
Type: integer  
Range: 0-183000000  
Default: 187500.
2. daypdege  
Day PDE bin for GE.  
Type: integer  
Range: 0-4294967295  
Default: 9000000.
3. qhpdevcg  
15-minute PDE bin for VCG.  
Type: integer  
Range: 0-183000000  
Default: 10.
4. daypdevcg  
Day PDE bin for VCG.  
Type: integer  
Range: 0-4294967295  
Default: 50.

**Command parameters - reset profile parameters of type ENET**

1. qhrtrpdege  
15-minute reset threshold for PDE bin for GE.  
Type: integer  
Range: 0-183000000  
Default: 937500.
2. dayrtrpdege  
Day reset threshold for PDE bin for GE.  
Type: integer  
Range: 0-4294967295  
Default: 4500000.

## RTRV-TCA-PROF: Retrieve TCA Profile

3. qhrtrpdevcg  
15-minute reset threshold for PDE bin for VCG.  
Type: integer  
Range: 0-183000000  
Default: 2.
4. dayrtrpdevcg  
Day reset threshold for PDE bin for VCG.  
Type: integer  
Range: 0-4294967295  
Default: 5.

**Example input/output**

The following example shows the successful completion of a RTRV-TCA-PROF command by the NE:

```
RTRV-TCA-PROF:UNITE-NE::123456::section-line;
  UNITE-NE 00-01-01 08:00:00
M 123456 COMPLD
  "SECTION-LINE:DEFAULT"
  "SECTION-LINE:DEFAULT0"
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-TCA-PROF command.

**Validation rule: profile name does not exist**

If the profile name specified does not exist.

Error code: IDNV - Input, Data Not Valid, TCA profile does not exist

**Related TL1 messages**

- “DLT-TCA-PROF: Delete TCA Profile” (9-119)
- “ED-TCA-PROF: Edit TCA profile” (9-81)
- “ENT-TCA-PROF: Enter TCA Profile” (9-60)

**References**

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## ENT-TCA-PROF: Enter TCA Profile

---

The ENT-TCA-PROF command allows the user to create a new Performance Monitoring (PM) Threshold Crossing Alert (TCA) profile with a specific name. The system supports two default sets of profiles called "Default" and "Default0." When a new profile is created, all the threshold values shall be copied from the "Default" profile.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): PM3  
Priority: 1  
Abortable: Yes

**Input format** Command Syntax:  
ENT-TCA-PROF:*tid::ctag::pftype,pfname;*

### Input parameters

#### Command parameters

1. tid – Target Identifier  
See definition in "RTRV-HDR: Retrieve header" (5-8).
2. ctag – Correlation Tag  
See definition in "RTRV-HDR: Retrieve header" (5-8).
3. pftype – Profile Type  
This indicates the type of PM TCA profile for the selected facility.  
Type: value set.  
Range: SECTION-LINE, RS-MS, HOVC, PATH
4. pfname – Profile Name  
See definition in "RTRV-TCA-PROF: Retrieve TCA Profile" (9-25).

**Output format** If the NE fully complies with the ENT-TCA-PROF request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

**Output parameters** The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behaviour description** The command shall establish/create a new TCA profile of type as specified by means of parameter pftype. The name of the new TCA profile corresponds to the parameter pfname. The creation of the new TCA profile shall be reported by means of an ENT-TCA-PROF notification.

**Example input/output** The following example shows the successful completion of a ENT-TCA-PROF command by the NE:

```
ENT-TCA-PROF:UNITE-NE::123456::section-line,DTAG;  
UNITE-NE 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section.

**Validation rule: Maximum number of TCA profiles reached**

If the maximum number of TCA profiles reached, the error message shall be generated.

Error code: SSRE - Status, System Resources Exceeded, limit of profiles exceeded

**Validation rule: profile name already exists**

If the system receives a new profile name that already exists for that profile type, the following error response is returned.

Error code: IEAE - Input, Entity Already Exists, duplicate profile name

**Related TL1 messages**

- “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25)
- “DLT-TCA-PROF: Delete TCA Profile” (9-119)
- “ED-TCA-PROF: Edit TCA profile” (9-81)

**References**    GR-833-CORE





## ENT-TCA-PROF notification

---

**Output format** The ENT-TCA-PROF notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Command syntax: ENT-TCA-PROF::*pftype,pfname:spec\_block*;

### Output parameters

#### Command parameters

1. pftype – Profile Type  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. pfname – Profile Name  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

#### Spec block parameters - profile parameters of type SECTION-LINE

1. qhcvsoc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. daycvsoc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhcvsoc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. daycvsoc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhcvsoc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. daycvsoc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhcvsoc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

8. daycvsoc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
9. qhcvsoc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
10. daycvsoc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
11. qhess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. dayess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
13. qhsess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. daysess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhsefss  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. daysefss  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhcvloc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. daycvloc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhcvloc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

20. daycvloc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
21. qhcvloc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
22. daycvloc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
23. qhcvloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. daycvloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
25. qhcvloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. daycvloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. dayesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
29. qhfeccloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
30. dayfeccloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
31. qhfeccloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

32. dayfeccloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
33. qhsesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
34. daysesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
35. qhuasl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
36. dayuasl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - profile parameters of type RS-MS**

1. qhrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. daysrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. daysrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
5. qhrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
6. daysrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
7. qhrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

8. daysnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. daymsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. daymsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
13. qhmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
14. daymsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
15. qhmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
16. daymsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
17. qhmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
18. daymsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
19. qhmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

20. daymses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhmsnfeccstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. daymsnfeccstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhmsnfeccstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. daymsnfeccstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
25. qhmsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
26. daymsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
27. qhmssuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
28. daymsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - reset profile parameters of type RS-MS**

1. qhrtrrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. dayrtrrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhrtrrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

4. daytrrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhrtrrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. daytrrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhrtrrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. daytrrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhrtrmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. daytrmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhrtrmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. daytrmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
13. qhrtrmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
14. daytrmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
15. qhrtrmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

16. daytrmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhrtrmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. daytrmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhrtrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. daytrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhrtrmsnfecscstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. daytrmsnfecscstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhrtrmsnfecscstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. daytrmsnfecscstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
25. qhrtrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
26. daytrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).



27. qhrtrmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. dayrtrmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Spec block parameters - profile parameters of type HO-VC**

1. qhvcbbbev3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. dayvcbbbev3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhvcbbbev4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. dayvcbbbev4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhvcbbbev44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. dayvcbbbev44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhvcbbbev416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. dayvcbbbev416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. dayvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

11. qhvcesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. dayvcesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
13. qhvcesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. dayvcesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhvcesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. dayvcesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhvcesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. dayvcesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhvcesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. dayvcesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhvcsesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. dayvcsesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

23. qhvcsesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. dayvcsesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
25. qhvcsesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. dayvcsesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhvcsesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. dayvcsesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
29. qhvcsesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
30. dayvcsesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
31. qhvcuasvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
32. dayvcuasvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
33. qhvcuasvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
34. dayvcuasvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

35. qhvcuasvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
36. dayvcuasvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
37. qhvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
38. dayvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
39. qhvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
40. dayvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - reset profile parameters of type HO-VC**

1. qhrtrvcbbbev3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. dayrtrvcbbbev3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhrtrvcbbbev4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. dayrtrvcbbbev4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
5. qhrtrvcbbbev44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
6. dayrtrvcbbbev44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

7. qhrtrvcbbbev416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. dayrtrvcbbbev416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhrtrvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. dayrtrvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhrtrvcsv3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. dayrtrvcsv3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
13. qhrtrvcsv4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
14. dayrtrvcsv4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
15. qhrtrvcsv44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
16. dayrtrvcsv44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
17. qhrtrvcsv416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
18. dayrtrvcsv416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

19. qhrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. dayrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. dayrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. dayrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
25. qhrtrvcsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
26. dayrtrvcsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
27. qhrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
28. dayrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
29. qhrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
30. dayrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

31. qhrtrvcuasvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
32. dayrtrvcuasvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
33. qhrtrvcuasvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
34. dayrtrvcuasvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
35. qhrtrvcuasvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
36. dayrtrvcuasvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
37. qhrtrvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
38. dayrtrvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
39. qhrtrvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
40. dayrtrvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Spec block parameters - profile parameters of type PATH**

1. qhcvpsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. daycvpsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

3. qhcvpsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. daycvpsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
5. qhcvpsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
6. daycvpsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
7. qhcvpsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
8. daycvpsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
9. qhcvpsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
10. daycvpsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
11. qhespsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. dayespsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
13. qhespsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. dayespsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).



15. qhespsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
16. dayespsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
17. qhespsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
18. dayespsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
19. qhespsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
20. dayespsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
21. qhsesp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
22. daysesp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
23. qhuasp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. dayuasp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Spec block parameters - profile parameters of type ENET**

1. qhpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. daypdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

3. qhpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. daypdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - reset profile parameters of type ENET**

1. qhrtrpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. dayrtrpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhrtrpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. dayrtrpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Example output**    The following example reports the creation of the TCA profile DTAG:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
    "TIME=15-00-00,DATE=00-11-03:ENT-TCA-PROF::RS-MS,DTAG:
qhrsnes=10,qhrsnbbe=6"
;
```



## ED-TCA-PROF: Edit TCA profile

---

**General** The ED-TCA-PROF command allows the user to modify the existing performance monitoring threshold crossing alert (TCA) profile contents or the profile name. The system default profile names (Default and Default0) cannot be changed. For a general description of TCA profiles, refer to the RTRV-TCA-PROF command.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): PM3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: ED-TCA-PROF:*tid::ctag::pftype,pfname:spec\_block;*

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition in “RTRV-HDR: Retrieve header” (5-8).
2. *ctag* – Correlation Tag  
See definition in “RTRV-HDR: Retrieve header” (5-8).
3. *pftype* – Profile Type  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. *pfname* – Profile Name  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

#### Spec block parameter

1. *newname*  
This parameter allows a new name to be assigned to the already established profile.  
Type: alphanumeric string.  
Range: This is a alphanumeric character string with a maximum of 24 characters. Empty string is not allowed.

**Spec block parameters - profile parameters of type  
SECTION-LINE**

1. qhcvsoc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. daycvsoc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhcvsoc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. daycvsoc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
5. qhcvsoc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
6. daycvsoc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
7. qhcvsoc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
8. daycvsoc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
9. qhcvsoc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
10. daycvsoc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
11. qhess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. dayess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

13. qhsess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
14. daysess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
15. qhsefss  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
16. daysefss  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
17. qhcvloc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
18. daycvloc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
19. qhcvloc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
20. daycvloc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
21. qhcvloc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
22. daycvloc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
23. qhcvloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. daycvloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

- 25. qhcvloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 26. daycvloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 27. qhesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 28. dayesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 29. qhfeccloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 30. dayfeccloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 31. qhfeccloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 32. dayfeccloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 33. qhsesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 34. daysesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 35. qhuasl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 36. dayuasl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - profile parameters of type RS-MS**

1. qhrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. daysnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. daysnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. daysnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. daysnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. daymsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. daymsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

13. qhmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. daymsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. daymsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. daymsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. daymses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhmsnfecdstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. daymsnfecdstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhmsnfecdstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. daymsnfecdstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).



25. qhmsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. daymsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. daymsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Spec block parameters - reset profile parameters of type RS-MS**

1. qhrtrrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. dayrtrrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhrtrrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. dayrtrrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhrtrrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. dayrtrrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhrtrrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. dayrtrrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

9. qhrtrmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
10. daytrmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
11. qhrtrmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. daytrmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
13. qhrtrmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. daytrmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhrtrmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. daytrmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhrtrmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. daytrmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhrtrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. daytrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

21. qhrtrmsnfecstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
22. daytrmsnfecstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
23. qhrtrmsnfecstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. daytrmsnfecstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
25. qhrtrmsse  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. daytrmsse  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhrtrmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. daytrmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Spec block parameters - profile parameters of type HO-VC**

1. qhvcbbev3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. dayvcbbev3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhvcbbev4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. dayvcbbev4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

5. qhvcbbevc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
6. dayvcbbbevc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
7. qhvcbbevc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
8. dayvcbbbevc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
9. qhvcbbevc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
10. dayvcbbbevc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
11. qhvcesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. dayvcesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
13. qhvcesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. dayvcesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhvcesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. dayvcesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

17. qhvcsesc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
18. dayvcsesc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
19. qhvcsesc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
20. dayvcsesc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
21. qhvcsesc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
22. dayvcsesc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
23. qhvcsesc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. dayvcsesc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
25. qhvcsesc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. dayvcsesc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhvcsesc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. dayvcsesc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

29. qhvcseSvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
30. dayvcseSvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
31. qhvcuAsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
32. dayvcuAsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
33. qhvcuAsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
34. dayvcuAsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
35. qhvcuAsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
36. dayvcuAsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
37. qhvcuAsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
38. dayvcuAsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
39. qhvcuAsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
40. dayvcuAsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - reset profile parameters of type HO-VC**

1. qhrtrvcbbevc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. dayrtrvcbbevc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhrtrvcbbevc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. dayrtrvcbbevc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhrtrvcbbevc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. dayrtrvcbbevc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhrtrvcbbevc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. dayrtrvcbbevc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhrtrvcbbevc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. dayrtrvcbbevc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. dayrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

13. qhrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. dayrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhrtrvcsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. dayrtrvcsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. dayrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. dayrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. dayrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. dayrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).



25. qhrtrvcsv44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. dayrtrvcsv44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhrtrvcsv416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. dayrtrvcsv416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
29. qhrtrvcsv464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
30. dayrtrvcsv464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
31. qhrtrvcu43c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
32. dayrtrvcu43c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
33. qhrtrvcu44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
34. dayrtrvcu44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
35. qhrtrvcu44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
36. dayrtrvcu44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

37. qhrtrvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
38. dayrtrvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
39. qhrtrvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
40. dayrtrvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - profile parameters of type PATH**

1. qhcvpsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. daycvpsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhcvpsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. daycvpsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
5. qhcvpsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
6. daycvpsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
7. qhcvpsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
8. daycvpsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

9. qhcvpsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. daycvpsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhespsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. dayespsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
13. qhespsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
14. dayespsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
15. qhespsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
16. dayespsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
17. qhespsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
18. dayespsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
19. qhespsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
20. dayespsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

21. qhsesp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. daysesp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhuasp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. dayuasp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - profile parameters of type ENET**

1. qhpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. daypdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. daypdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - reset profile parameters of type ENET**

1. qhrtrpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. dayrtrpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhrtrpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. dayrtrpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Output format** If the NE fully complies with the ED-TCA-PROF request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

**Output parameters** The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behaviour  
description**

**TCA Profile modification**

The command shall modify the existing performance monitoring Threshold Crossing Alert (TCA) profile content or the profile name.

The modification of the TCA profile shall be reported by means of an ED-TCA-PROF notification.

**Example input/output** The following example shows the successful completion of a ED-TCA-PROF command by the NE:

```
ED-TCA-PROF:UNITE-NE::123456::rs-ms,ATT:qhrrsnes=10,qhrrsnbbe=6;
UNITE-NE 00-01-01 08:00:00
M 123456 COMPLD
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ED-TCA-PROF command.

**Validation rule: profile name does not exist**

If the profile name specified does not exist.

Error code: IDNV - Input, Data Not Valid, profile name does not exist

**Validation rule: profile name already exists**

If the system receives a new profile name that already exists for that profile type, the following error response is returned.

**Error code:** IEAE - Input, Entity Already Exists, duplicate profile name

**Validation rule: rename default profile name**

If a user tries to change the system default profile name (Default / Default0), the following error response is returned.

**Error code:** IDNC - Input, Data Not Consistent, new name for default profile

**Validation rule: value change of default profile Default0**

If a user tries to change values of the system default profile "Default0", the following error response is returned.

**Error code:** IDNC - Input, Data Not Consistent, value change not allowed for profile Default0

**Related TL1 messages**

- "DLT-TCA-PROF: Delete TCA Profile" (9-119)
- "RTRV-TCA-PROF: Retrieve TCA Profile" (9-25)
- "ENT-TCA-PROF: Enter TCA Profile" (9-60)

**References** GR-833-CORE



## ED-TCA-PROF notification

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**Output format** The ED-TCA-PROF notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Command syntax: ED-TCA-PROF::*pftype,pfname:spec\_block*

### Output parameter

#### Command parameters

1. *pftype* – Profile Type  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. *pfname* – Profile Name  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

#### Spec block parameter

1. *newname*  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

#### Spec block parameters - profile parameters of type SECTION-LINE

1. *qhcvsoc3*  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. *daycvsoc3*  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. *qhcvsoc12*  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. *daycvsoc12*  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. *qhcvsoc48*  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

6. daycvsoc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
7. qhcvsoc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
8. daycvsoc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
9. qhcvsoc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
10. daycvsoc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
11. qhess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. dayess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
13. qhsess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. daysess  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhsefss  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. daysefss  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhcvloc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).



18. daycvloc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
19. qhcvloc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
20. daycvloc12  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
21. qhcvloc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
22. daycvloc48  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
23. qhcvloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. daycvloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
25. qhcvloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. daycvloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. dayesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
29. qhfecclloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

- 30. dayfecclloc192  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 31. qhfecclloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 32. dayfecclloc768  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 33. qhsesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 34. daysesl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 35. qhuasl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 36. dayuasl  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - profile parameters of type RS-MS**

- 1. qhrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 2. daysrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 3. qhrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 4. daysrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
- 5. qhrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

6. daysnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. daysnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. daymsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. daymsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
13. qhmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
14. daymsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
15. qhmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
16. daymsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
17. qhmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

18. daymsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. daymses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhmsnfecstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. daymsnfecstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhmsnfecstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. daymsnfecstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
25. qhmsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
26. daymsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
27. qhmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
28. daymsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - reset profile parameters of type RS-MS**

1. qhrtrrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. dayrtrrsnbbe  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhrtrrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. dayrtrrsnes  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhrtrrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. dayrtrrsnses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhrtrrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. dayrtrrsnuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhrtrmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. daytrmsbbestm1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhrtrmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. daytrmsbbestm4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

13. qhrtrmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. daytrmsbbestm16  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhrtrmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. daytrmsbbestm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhrtrmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. daytrmsbbestm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhrtrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. daytrmses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhrtrmsnfecbstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. daytrmsnfecbstm64  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhrtrmsnfecbstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. daytrmsnfecbstm256  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

25. qhrtrmsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. daytrmsses  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhrtrmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. daytrmsuas  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Spec block parameters - profile parameters of type HO-VC**

1. qhvcbbevc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. dayvcbbevc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhvcbbevc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. dayvcbbevc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhvcbbevc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. dayvcbbevc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhvcbbevc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. dayvcbbevc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

9. qhvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
10. dayvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
11. qhvcesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
12. dayvcesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
13. qhvcesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. dayvcesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhvcesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. dayvcesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhvcesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. dayvcesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhvcesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. dayvcesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).



21. qhvcsesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
22. dayvcsesvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
23. qhvcsesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
24. dayvcsesvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
25. qhvcsesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
26. dayvcsesvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
27. qhvcsesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
28. dayvcsesvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
29. qhvcsesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
30. dayvcsesvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
31. qhvcuasvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
32. dayvcuasvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

33. qhvcuasvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
34. dayvcuasvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
35. qhvcuasvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
36. dayvcuasvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
37. qhvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
38. dayvcuasvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
39. qhvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
40. dayvcuasvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - reset profile parameters of type HO-VC**

1. qhrtrvcbbevc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
2. dayrtrvcbbevc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
3. qhrtrvcbbevc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
4. dayrtrvcbbevc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

5. qhrtrvcbbbev44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. dayrtrvcbbbev44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhrtrvcbbbev416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. dayrtrvcbbbev416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhrtrvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. dayrtrvcbbbev464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhrtrvcsv3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. dayrtrvcsv3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
13. qhrtrvcsv4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
14. dayrtrvcsv4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
15. qhrtrvcsv44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
16. dayrtrvcsv44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

17. qhrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. dayrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. dayrtrvcsvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. dayrtrvcsvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. dayrtrvcsvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
25. qhrtrvcsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
26. dayrtrvcsvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
27. qhrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
28. dayrtrvcsvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

29. qhrtrvcseSvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
30. dayrtrvcseSvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
31. qhrtrvcuSvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
32. dayrtrvcuSvc3  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
33. qhrtrvcuSvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
34. dayrtrvcuSvc4  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
35. qhrtrvcuSvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
36. dayrtrvcuSvc44c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
37. qhrtrvcuSvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
38. dayrtrvcuSvc416c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
39. qhrtrvcuSvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
40. dayrtrvcuSvc464c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

**Spec block parameters - profile parameters of type PATH**

1. qhcvpsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. daycvpsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhcvpsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. daycvpsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
5. qhcvpsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
6. daycvpsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
7. qhcvpsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
8. daycvpsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
9. qhcvpsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
10. daycvpsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
11. qhespsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
12. dayespsts1  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

13. qhespsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
14. dayespsts3c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
15. qhespsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
16. dayespsts12c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
17. qhespsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
18. dayespsts48c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
19. qhespsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
20. dayespsts192c  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
21. qhsesp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
22. daysesp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
23. qhuasp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).
24. dayuasp  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile”  
(9-25).

### **Spec parameters - profile parameters of type ENET**

1. qhpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. daypdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. daypdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

### **Spec parameters - reset profile parameters of type ENET**

1. qhrtrpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. dayrtrpdege  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
3. qhrtrpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
4. dayrtrpdevcg  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Example output**      The following example shows the successful completion of a  
ED-TCA-PROF command by the NE:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:ED-TCA-PROF::RS-MS,DTAG:
qhrrsnes=10,qhrrsnbbe=6"
;
```





## DLT-TCA-PROF: Delete TCA Profile

---

**General** The DLT-TCA-PROF command can be initiated by users to remove a Performance Monitoring (PM) threshold profile from the system memory. The system supports two default sets of profiles called "Default" and "Default0." The system default profiles cannot be deleted.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): PM3  
Priority: 1  
Abortable: No

**Input format** Command Syntax: DLT-TCA-PROF:*tid::ctag::pftype,pfname;*

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition in "RTRV-HDR: Retrieve header" (5-8).
2. *ctag* – Correlation Tag  
See definition in "RTRV-HDR: Retrieve header" (5-8).
3. *pftype* – Profile Type  
See definition in "RTRV-TCA-PROF: Retrieve TCA Profile" (9-25).
4. *pfname* – Profile Name  
See definition in "RTRV-TCA-PROF: Retrieve TCA Profile" (9-25).

**Output format** If the NE fully complies with the DLT-TCA-PROF request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

**Output parameters** The output parameters *sid*, *date*, *time* and *ctag* included in the normal completion response are specified in the Output parameter section of "RTRV-HDR: Retrieve header" (5-8).

**Detailed behaviour  
description**

**TCA Profile deletion**

The command shall delete the existing performance monitoring Threshold Crossing Alert (TCA) profile.

The deletion of the TCA profile shall be reported by means of an DLT-TCA-PROF notification.

**Example input/output**

The following example shows the successful completion of a DLT-TCA-PROF command by the NE:

```
DLT-TCA-PROF:UNITE-NE::123456::section-line,att;  
    UNITE-NE 00-01-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the DLT-TCA-PROF command.

**Validation rule: profile name does not exist**

If the profile name specified does not exist

Error code: IDNV - Input, Data Not Valid, profile name does not exist

**Validation rule: deleting assigned profile**

If a user requests to delete a profile name and there are ports or tributaries in the system that are provisioned to use the given profile for thresholding, the following error response is returned.

Error code: SNVS - Status, Not in Valid State , TCA profile assigned

**Validation rule: deleting the system default profile**

If a user requests to delete the system default profiles (Default and Default0), the following error response is returned.

Error code: IDNC - Input, Data Not Consistent, default profile

**Related TL1 messages**

- “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25)
- “ENT-TCA-PROF: Enter TCA Profile” (9-60)
- “ED-TCA-PROF: Edit TCA profile” (9-81).

**References** GR-833-CORE



## DLT-TCA-PROF notification

---

**Output format** The DLT-TCA-PROF notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Command syntax: DLT-TCA-PROF::*pftype,pfname*

### Output parameters

#### Command parameters

1. pftype – Profile Type  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).
2. pfname – Profile Name  
See definition in “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25).

**Example output** The following example shows the successful completion of a DLT-TCA-PROF command by the NE:

```
LT-UNITE 00-11-03 15:00:00
A 000 REPT DBCHG
  "TIME=15-00-00,DATE=00-11-03:DLT-TCA-PROF::RS-MS,DTAG"
;
```



## System Start-up with Default DB

---

**General** The system shall create during start-up with default DB two TCA profiles per supported profile type with profile name "DEFAULT" and "DEFAULT0". The values for profile "DEFAULT" shall be as specified in corresponding default requirements for each profile parameter. The values for profile "DEFAULT0" shall be '0' for each profile parameter.







# 10 TL1 messages - synchronization

## Overview

---

**Purpose** This section contains the TL1 commands related to the synchronization management. The synchronization commands covers types of assigning, modifying or removing and retrieving system timing attributes. Furthermore they are initiating switch requests and releasing requests.

It contains following commands and levels.

- RTRV-SYNCN
  - System Timing
  - Output Timing
  - Assigned Timing Reference
  - External Timing Input
  - External Timing Output
- SET-SYNCN
  - System Timing
  - Assigned Timing Reference
  - External Timing Input
  - External Timing Output
- OPR-SYNCNSW
- RLS-SYNCNSW.

For the system, the choice between SONET and SDH is determined by the system synchronization characteristic. The system synchronization characteristic may only be adjustable in the MCOND state. If the system synchronization characteristic is SONET, all SONET related parameter and settings are valid. All SSM messages, based on the SDH market are handled as being invalid. If the system synchronization characteristic is SDH, all SDH related parameter and settings are valid. All SSM messages, based on the SONET market are handled as being invalid.

The values of a number of parameters will be distinguished from the system synchronization characteristic. The parameter *syncrtc* in RTRV-EQPT and ED-EQPT determines whether the system synchronization characteristic, and therewith the NE, is in SDH or in SONET mode.

Contents

|                                             |                       |
|---------------------------------------------|-----------------------|
| RTRV-SYNCN: Retrieve synchronization        | <a href="#">10-3</a>  |
| SET-SYNCN: Set synchronization              | <a href="#">10-19</a> |
| SET-SYNCN notification                      | <a href="#">10-27</a> |
| OPR-SYNCNSW: Operate synchronization switch | <a href="#">10-31</a> |
| RLS-SYNCNSW: Release synchronization switch | <a href="#">10-37</a> |
| Protection switch notification              | <a href="#">10-41</a> |
| Autonomous notifications                    | <a href="#">10-46</a> |





## RTRV-SYNCN: Retrieve synchronization

---

The command displays the provisioning and operational information of the synchronization attributes as set by the SET-SYNCN command and after initial system start-up. It also displays the status of the external timing reference input and output ports.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
 Priority: 1  
 Abortable: Yes

**Input format** Command Syntax: RTRV-SYNCN:*tid*[:*aid*]:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – target identifier  
 See definition of *tid* – *target identifier* in “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – access identifier  
 This parameter is used to identify the timing related settings. The AID separates the parameter in system timing related parameter, output timing related parameters, parameters related to assigned timing references and parameters for external timing input and external timing output. The *all* AID retrieves all retrievable parameters for synchronization. If the AID is omitted, the outputs for the whole synchronization area are given.

Type: AID

Range:

- SystemAID
- Timing\_Output\_AID
- External\_timing\_ref\_AID
- Line\_timing\_ref\_AID
- External\_Timing\_input\_port\_AID

- External\_Timing\_output\_port\_AID
  - all.
- Default: all.
3. ctag – correlation tag  
See definition of *ctag – correlation tag* in “RTRV-HDR: Retrieve header” (5-8).

**Output format** After receiving the RTRV-SYCN command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid:spec_block"
  ...
  ...
  "aid:spec_block"
;
```

## Output parameters

### Command parameters

1. aid – access identifier  
This parameter specifies the timing related settings.  
Type: AID  
Range:
  - SystemAID
  - Timing\_Output\_AID
  - External\_timing\_ref\_AID
  - Line\_timing\_ref\_AID
  - External\_Timing\_input\_port\_AID
  - External\_Timing\_output\_port\_AID
 Default: Not applicable.

### Spec block parameters

1. System Timing
  - a. active\_ref – active timing reference status

This parameter displays the active timing reference, which the system clock is currently using for locked mode of system timing. If no timing reference is assigned or all references are failed the AID value EXTREF1 is returned.

Type: AID

Range: External\_timing\_ref\_AID, Line\_timing\_ref\_AID

Default: EXTREF1.

b. `clkmod` – clock mode

This parameter specifies the provisioned operational mode of the system timing.

In the `clockmod == FREE-RUNNING` mode the system clock process uses the internal oscillator as reference. In the `clockmod == LOCKED` mode the system clock process uses the input signal from the system.

Type: Alphanumeric value set.

Range: FREE-RUNNING, LOCKED.

Default: FREE-RUNNING.

c. `clkmod_stat` – system clock mode status

This parameter specifies the state of the system clock. The range is depending on the system synchronization characteristic.

**NORMAL:** This operational mode indicates either the NE derives timing from the internal oscillator when `clockmod == FREE-RUNNING`, or the system timing is locked to a timing reference signal when `clockmod == LOCKED` and the reference is derived from one of the timing input signals. Refer to ***clkmod*** parameter.

**AUTONOMOUS-HOLDOVER:** This state indicates that all references are failed and no higher priority request is present.

**FORCED-HOLDOVER:** This operational mode is caused by a Clock Backup Request.

**FAST-START:** This operational mode indicates for fast pull-in of the clock when recovering from holdover (for SONET only).

The values AUTONOMOUS-HOLDOVER, FORCED-HOLDOVER and FAST-START are only possible when `clockmod == LOCKED`.

Type: Alphanumeric value set.

Range:

SONET: NORMAL, AUTONOMOUS-HOLDOVER,  
FORCED-HOLDOVER, FAST-START.

SDH: NORMAL, AUTONOMOUS-HOLDOVER,  
FORCED-HOLDOVER.

Default: NORMAL

d. refsw\_stat – reference switch status

The System Timing Reference Switch Request State is a state of the system timing.

The value FORCED means, the system enters the Forced Switch state upon the initiation and successful completion of the Forced Switch command. While in the Forced Switch state the system may not switch the active timing reference, neither automatically nor by means of the Forced Switch or Manual Switch command.

The value MANUAL means, the system enters the Manual Switch state upon the initiation and successful completion of the Manual Switch command. While in the Manual Switch state the system may switch the active timing reference automatically if required for protection switching.

The parameter NO-REQUEST indicates, this is the routine-operation quiet state in which no external command activities are occurring. The system enters this state upon initial start-up, and following a clear command, or the clearing of an automatic switch.

Type: Alphanumeric value set.

Range: MANUAL, FORCED, NO-REQUEST.

Default: NO-REQUEST.

e. stratum\_level – stratum level status

This parameter provides information about the level of the system clock. The parameter is depending from the system synchronization characteristic.

Type: Alphanumeric value set

Range:

SONET: 3

SDH: SEC

Default:

SONET: 3

SDH: SEC.

f. syncmsg – system synchronization status messaging mode

This parameter is used to ENABLE or DISABLE the SSM protocol.

The parameter provisions the automatic reference selection process to use the incoming QLs in QL-enabled mode or to ignore them in QL-disabled mode. In case of DISABLE, for SDH all output SSMs shall be set to DNU, for SONET all output SSMs shall be set to STU.

Type: Alphanumeric value set.

Range: ENABLE, DISABLE.

Default: ENABLE.

g. sysql\_stat – system quality level status

This parameter indicates the overall system timing quality level status. If the system configured as SONET then the SONET related values are indicated and if the system configured as SDH the SDH related values are indicated.

Type: Alphanumeric value set.

Range:

SONET: PRS, STU, ST2, ST3, DUS

SDH: PRC, SSUL, SSUT, SEC, DNU.

Default:

SONET: DUS

SDH: DNU.

h. timing – ASAP name

This parameter specifies the name of the ASAP (Alarm Severity Assignment Profile) that is assigned to timing.

Type: Alphanumeric value set.

Range: PFNAME (alphanumeric string with 1... 24 characters). A hyphen ( - ) is additionally allowed in the name.

Default: Default

i. wtr – wait to restore

This parameter specifies the provisioned wait to restore timer used for all timing ports for revertive switching. This is the amount of time it takes to switch from lower priority to higher priority references. The value range depends from the system synchronization characteristic.

Type: Alphanumeric value set.

Range:

SONET: 0SEC, 20SEC, 0...60MIN (1 minute steps), 99 (infinite).

SDH: 0SEC, 0...60MIN (1 minute steps); the values "0SEC" and "0MIN" can be used for SONET and SDH to provision a zero wait to restore time.

Default:

SONET: 20SEC

SDH: 5MIN

j. wu\_stat – warm up status

This parameter is an attribute of the timing pack hardware design.

At initial start up of the system and at replacing of the active or standby timing function the system is in warm-up state. DNU/DUS is transmitted during this state on all ports. The clock would be expected to warm up for a temporary period of time before transition to NORMAL.

Type: Alphanumeric value set.

Range: NORMAL, WARMING-UP.

Default: NORMAL.

2. Output Timing (instance only valid for SDH)

a. active\_oref\_stat – active output timing reference status

This parameter displays the current selected timing reference of the timing link switch for the external output.

Type: AID.

Range: Line\_timing\_ref\_AID.

Default: LINE1.

b. orefswr\_stat – output timing reference switch request status

This parameter indicates the output timing reference switch request state.

The value MANUAL means, a manual switch is active to the external timing output. The value FORCED means, a forced switch is active to the external timing output. The value NO-REQUEST means, no external command activities are occurring at the external timing output.

Type: Alphanumeric value set.

Range: MANUAL, FORCED, NO-REQUEST.

Default: NO-REQUEST.

3. Assigned Timing Reference

a. extout\_pri – timing output reference priority

This parameter specifies the priority assignment of the timing link switch of the external output timing. This parameter is only for SDH and for line timing references.

The greater the number the lower the priority. The number "1" indicates the highest priority. The priority "0" means not assigned for external output.

Type: Numeric value set.

Range: 0 (means DISABLED), 1, 2, 3, 4, 5, 6.

Default: 0 (means DISABLED).

b. inql – assigned timing reference quality value

This parameter displays the input synchronization message for each port of the timing link switch provisioning of the system timing and of the output timing. In the output timing context the values for SDH are valid only. In case of invalid SSM, the value DNU or DUS is displayed. The value range depends from the system synchronization characteristic.

Type: Alphanumeric value set.

Range: SONET: PRS, STU, ST2, ST3, DUS

SDH: PRC, SSUT, SSUL, SEC, DNU.

Default: Not applicable.

c. inql\_stat – input quality status

This parameter indicates the synchronization messaging quality level status for the specified timing reference.

The parameter describes the validity of the incoming quality level and take the following values: VALID, when the QL is a valid SSM and stable, INVALID, when the QL is not a valid SSM, or unstable, NOT-SUPPORTED, when SSM reception is not supported on that interface (such as 2MHz), NOT-APPLICABLE, when no port is assigned to the current timing reference or the assigned timing reference experiences a reference fail.

Type: Alphanumeric value set.

Range: VALID, INVALID, NOT-SUPPORTED, NOT-APPLICABLE.

Default: NOT-APPLICABLE.

d. ql\_prov – quality provisioned

This parameter defines the quality for the specified timing reference to a fixed SSM value. It is the provisioned quality level sync message value that will be received on timing references.

This parameter is related to all assigned timing references (both external timing references and line timing references) and overrides what is received for the respective timing reference. The AUTO value implies sync message support. The AUTO value is rejected if SSM is not supported for the assigned timing reference (i.e. for DS1 SF). The value range depends from the system synchronization characteristic. Per default shall be:

AUTO – for STM-N/OC-N line, 2Mbit/s framed or DS1 ESF with SSM,

SSUT – for 2MHz, 2Mbit/s unframed or framed without SSM

STU – for DS1 SF or DS1 ESF without SSM

Type: Alphanumeric value set.

Range:

SONET: AUTO, PRS, STU, ST2, ST3

SDH: AUTO, PRC, SSUL, SSUT, SEC.

Default:

SONET: AUTO (External\_timing\_ref\_AID, Line\_timing\_ref\_AID)

SDH: AUTO (Line\_timing\_ref\_AID) SSUT (External\_timing\_ref\_AID).

e. ref\_lock – timing reference lockout status

This parameter displays the timing reference lockout state to the specified timing reference. It is the input status for each port of the timing link switch provisioning of the system timing.

The value LOCKOUT means, the assigned reference has been locked out by the user, and cannot be used as a timing reference signal until the lockout is cleared.

Type: Alphanumeric value set.

Range: LOCKOUT, NO-LOCKOUT.

Default: NO-LOCKOUT.

f. ref\_stat – assigned timing reference signal status

The Assigned Timing Reference Signal Status is a status of each timing reference.



The status **NORMAL** means, the timing reference is available and operating normally without faults. The status **FAILED** means, the timing reference is failed. The status **WAIT-TO-RESTORE** means, the wait to restore timer is active before transition to **NORMAL**. The status **NOT-CONNECTED** means, there is no timing reference signal connected to the timing port.

Type: Alphanumeric value set.

Range: **NORMAL**, **FAILED**, **WAIT-TO-RESTORE**, **NOT-CONNECTED**.

Default: **NOT-CONNECTED**.

- g. **sclkref\_lockstat** – station clock output timing reference lockout state  
This parameter indicates the assigned station clock output timing reference lockout state. This parameter is only for SDH and for line timing references.  
Type: Alphanumeric value set.  
Range: **LOCKOUT**, **NO-LOCKOUT**.  
Default: **NO-LOCKOUT**.
- h. **syncref\_pri** – system timing reference priority  
This parameter defines the priority for assigned timing references.  
When multiple input references have been given the same priority value, it implies non-revertive switching between the associated references. Otherwise, it implies revertive switching to the reference with the highest assigned priority. When the QL-control is disabled, the selection process is controlled by signal status and port priority. The greater the number, the lower the priority. Priority "0" means not assigned.  
Type: Numeric value set.  
Range: 0 (means **DISABLE**), 1, 2, 3, 4, 5, 6, 7, 8.  
Default: 0 (means **DISABLE**).
- i. **timing** – ASAP name  
See definition in "RTRV-SYCN: Retrieve synchronization" (10-3) section system timing of this parameter.
- j. **tpmode** – timing port mode monitoring

This parameter specifies the monitoring status of the timing port. If the timing port is in the MONITORED mode and the reference is in FAILED status alarms are active for this port. The value NOT-MONITORED means that alarm monitoring is not occurring on the port.

Type: Alphanumeric value set.

Range: MONITORED, NOT-MONITORED.

Default: NOT-MONITORED.

- k. tpql\_in – incoming SSM value of the timing port  
This parameter indicates the QL value for the timing port. The value range depends on the system synchronization characteristic.  
The parameter describes the incoming SSM and takes the following values:  
PRS – Stratum-1 Traceable STU – Synchronized  
Traceability Unknown  
ST2 – Stratum-2  
ST3 – Stratum-3  
DUS/DNU – Don't Use for Synchronization  
PRC – Primary Reference Clock  
SSUT – Synchronization Supply Unit Transit node  
SSUL – Synchronization Supply Unit Local node  
SEC – SDH Equipment Clock  
SSMn – other SSM values with invalid state (for SDH)  
UNSTABLE – value is unstable  
NONE – SSM value not supported by hardware  
Type: Alphanumeric value set.  
Range:  
SONET: PRS (0001), STU (0000), ST2 (0111), ST3 (1010), DUS (1111), NONE  
SDH: PRC (0010), SSUT (0100), SSUL (1000), SEC (1011), DNU (1111), SSM0 (0000), SSM1 (0001), SSM3 (0011), SSM5 (0101), SSM6 (0110), SSM7 (0111), SSM9 (1001), SSM10 (1010), SSM12 (1100), SSM13 (1101), SSM14 (1110), UNSTABLE, NONE.  
Default: Not applicable.
- l. tref\_aid – timing reference assigned port AID  
This parameter specifies the port AID of the assigned timing reference AID.

The parameter is rejected, if the timing reference already assigned to a timing port, or if the reference does not support SSM and timing port is provisioned AUTO, or if the unit which delivers the reference is not present or pre-provisioned. It is not possible to assign more than one reference from a unit. It is not possible to un-assign units from which a reference is assigned to a timing port. It is also not possible to assign a reference from a protection port in a protection group. The value NOT-CONNECTED means no reference is assigned to current timing port.

Type: AID.

Range: External\_Timing\_input\_port\_AID, SPortAID, NOT-CONNECTED.

Default: NOT-CONNECTED.

#### 4. External Timing Input

##### a. ext\_if – external input signal format

This parameter specifies the format of the external timing input.

The value range depends on the system synchronization characteristic. The external timing input format can be set at both external timing inputs individually. The reference is rejected, if the reference does not support SSM and the timing port is provisioned AUTO.

Type: Alphanumeric value set.

Range:

SONET: SF, ESF

SDH: 2MHz, 2Mbit-unframed, 2Mbit-framed.

Default:

SONET: ESF

SDH: 2MHz.

##### b. ext\_isa – external input sa bit location

This parameter defines the external input Sa bit location. It is only valid for the external timing input format “2Mbit/s” framed; i.e. for ports with format unequal to “2Mbit/s framed” the parameter value is retrievable, but it has no impact on the ports transmission behavior.

The location of the Sa bit is can be set at both external timing inputs individually. One of the Sa4 to Sa8 bits of the 2Mbit/s sub-multiframe is allocated for Synchronization Status Messages (SSM).

Type: Alphanumeric value set.

Range: SA4, SA5, SA6, SA7, SA8.

Default: SA4.

c. ext\_issm – external input ssm support

This parameter specifies if the SSM mode is supported or not on the external timing input port.

The parameter is valid depending from the system synchronization characteristic, for SDH 2Mbit/s framed and for SONET DS1 ESF; i.e. for ports with format unequal to “2Mbit/s framed” or “DS1 ES” the parameter value is retrievable, but it has no impact on the ports transmission behavior. The parameter is adjustable individually to both external timing input ports.

Type: Alphanumeric value set.

Range: SUPPORTED, NOT-SUPPORTED.

Default: SUPPORTED.

5. External Timing Output

a. ext\_equ – cable equalization

This parameter specifies the timing output cable equalization to adjust the specified timing reference output signal power.

This parameter is valid only for DS1 (SONET).

This parameter is rejected for all input interfaces except DS1. The values are represented by percentage (3.0dB=100%; 2.4dB=80%; 1.8dB=60%; 1.2dB=40%; 0.6dB=20%).

Type: Numeric value set.

Range: 20, 40, 60, 80, 100.

Default: 20.

b. ext\_of – external output signal format

This parameter specifies the external output signal format. The value range depends from the system synchronization characteristic.

Type: Alphanumeric value set.

Range:

SONET: SF, ESF

SDH: 2MHz, 2Mbit-unframed, 2Mbit-framed.

Default:

SONET: ESF

SDH: 2MHz.

c. ext\_osa – external output sa bit location

This parameter defines the external output Sa bit location. This parameter is only valid for external timing output format “2Mbit/s framed”; i.e. for ports with format unequal to “2Mbit/s framed” the parameter value is retrievable, but it has no impact on the ports transmission behavior.

Type: Alphanumeric value set.

Range: SA4, SA5, SA6, SA7, SA8.

Default: SA4.

d. ext\_out\_sig\_stat – external output signal status

This parameter indicates the external output signal status.

The value NORMAL indicates when the output timing signal is enabled and providing a correctly synchronized output timing signal. The value DISABLED indicates when the output timing signal has been disabled by means of user provisioning. The value UNACCEPTABLE indicates when the output timing signal is enabled but the timing output does not provide a suitable timing reference signal. This is caused by failed reference into the timing output process or references rejected based on threshold AIS criteria.

Type: Alphanumeric value set

Range: NORMAL, DISABLED, UNACCEPTABLE.

Default: DISABLED.

e. extout\_en – external timing output enabling/disabling

This parameter specifies whether the external timing output is enabled or disabled.

Type: Alphanumeric value set.

Range: ENABLE, DISABLE.

Default: DISABLE.

f. extout\_prov – external timing output selection

This parameter specifies the operation mode of the external output timing.

The value SETG means the system clock. The value TLS means the output. For SONET both values are fixed to the respective external timing output. The value range depends on the system synchronization characteristic.

Type: Alphanumeric value set.

Range:

SONET: LINE1 [ fix for output 1 ], LINE2 [ fix for output 2 ]

SDH: SETG, TLS.

Default: SONET: LINE1 [ fix for output 1 ], LINE2 [ fix for output 2 ]  
SDH: SETG.

- g. extout\_ssm – external timing output AIS mode  
This parameter specifies which value will be send when the signal level is below the quality acceptance level or when **frcdus** is enabled. The parameter is valid depending from the system synchronization characteristic, for SDH 2Mbit/s framed and for SONET DS1 ESF; i.e. for ports with format unequal to “2Mbit/s framed” or “DS1 ESF” the parameter value is retrievable, but it has no impact on the ports transmission behavior.  
The value AISMODE means AIS is inserted in the external timing output signal. The value QLMODE means DUS is inserted in the external timing output signal.  
Type: Alphanumeric value set.  
Range: AISMODE, QLMODE.  
Default: QLMODE.
- h. frcdus – forced DNU/DUS  
This parameter specifies the synchronization messaging forced DNU/DUS enable or disable for the timing output port. DUS applies to SONET and DNU applies to SDH. This is only valid for '2Mbit/s framed' and 'DS1 ESF'; i.e. for ports with format unequal to “2Mbit/s framed” or “DS1 ESF” the parameter value is retrievable, but it has no impact on the ports transmission behavior.  
Type: Alphanumeric value set.  
Range: ENABLE, DISABLE.  
Default: DISABLE.
- i. loopdelay – timing regenerator loop delay  
This parameter indicates the delay in the SASE/BITS loop operation. The values are represented by seconds in steps of 1 seconds per loop.  
Type: Numeric value set.  
Range: 0...60 (1 seconds steps).  
Default: 10.
- j. ql\_out – quality of the external timing output port  
This parameter indicates the quality value on the signal for the timing output port.  
Type: Alphanumeric value set.

Range:

SONET: PRS, STU, ST2, ST3, DUS

SDH: PRC, SSUL, SSUT, SEC, DNU.

Default: Not applicable.

- k. qlout\_tais – acceptance quality level for output threshold AIS

This parameter is the provisioned quality acceptance level for external timing output. When the incoming message is below this level, AIS or DUS (depending from the *extout\_ssm* value) will be inserted into the external timing output. The value range depends from the system synchronization characteristic.

Type: Alphanumeric value set.

Range:

SONET: PRS, STU, ST2, ST3

SDH: PRC, SSUT, SSUL, SEC.

Default:

SONET: ST3

SDH: SEC.

- l. regen\_loop – timing regenerator loop

This parameter specifies the avoiding of loops over the SASE/BITS clocks.

When this parameter is set to ENABLED, the synchronization message DUS will be inserted in the traffic output port associated with the traffic input port used as source for the station clock. The parameter is selectable for both external timing outputs individually.

Type: Alphanumeric value set.

Range:

SONET: DISABLE, ENABLE

SDH: DISABLE, EXTREF1, EXTREF2, BOTH.

Default:

SONET: ENABLE

SDH: DISABLE.

- m. timing – ASAP name

See definition in “RTRV-SYCN: Retrieve synchronization” (10-3) section system timing of this parameter.

**Detailed behavior description**

The RTRV-SYCN command retrieves the output parameters values for the specified input AID as described in “RTRV-SYCN: Retrieve synchronization” (10-3) output parameters section.

**Example input/output**

The following is an example of the RTRV-SYCN command:

```
RTRV-SYCN:LT-UNITE:extrefall:123456;  
LT-UNITE 00-11-13 12:00:00  
M 123456 COMPLD  
"EXTREF1:tref_aid=EXTTMG0,syncref_pri=2,ref_  
stat=NORMAL,  
ref_lock=NO-LOCKOUT,inql=SSUT,inql_stat=NOT-SUPPORTED"  
"EXTREF2:tref_aid=EXTTMG1,syncref_pri=3,ref_  
stat=NORMAL,  
ref_lock=NO-LOCKOUT,inql=SSUT,inql_stat=NOT-SUPPORTED"  
;
```

**Related TL1 messages**

- “SET-SYCN: Set synchronization” (10-19)
- “OPR-SYCN: Operate synchronization switch” (10-31)
- “RLS-SYCN: Release synchronization switch” (10-37)





## SET-SYNCN: Set synchronization

---

The SET-SYNCN command is used to provision system timing clock mode, assign timing references, and external input and output timing port attributes. The command is used not only to assign system timing attributes but also to modify or remove them.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
 Priority: 1  
 Abortable: No.

**Input format** Command Syntax: SET-SYNCN:*tid:aid:ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. *tid* – target identifier  
 See definition of *tid – target identifier* in “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – access identifier  
 This parameter specifies the timing related settings. The AID separates the parameter in system timing related parameter, parameters related to assigned timing references and parameters for port provisioning. The values all or *someprefix* all are not allowed in this context.  
 Type: AID  
 Range: SystemAID, External\_timing\_ref\_AID, Line\_timing\_ref\_AID, External\_Timing\_input\_port\_AID, External\_Timing\_output\_port\_AID  
 Default: Not applicable.
3. *ctag* – correlation tag  
 See definition of *ctag – correlation tag* in “RTRV-HDR: Retrieve header” (5-8).

#### Spec block parameters

1. System Timing
  - a. *clkmod* – clock mode

See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.

- b. syncmsg – system synchronization status messaging mode  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
- c. timing – ASAP name  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
- d. wtr – wait to restore  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.

## 2. Assigned Timing Reference

- a. extout\_pri – timing output reference priority  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
- b. ql\_prov – quality provisioned  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
- c. syncref\_pri – system timing reference priority  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
- d. timing – ASAP name  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
- e. tpmode – timing port mode monitoring  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
- f. tref\_aid – timing reference assigned port AID  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.

## 3. External Timing Input

- a. ext\_if – external input signal format  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Input of this parameter.
- b. ext\_isa – external input sa bit location

See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Input of this parameter.

- c. ext\_issm – external input ssm support  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Input of this parameter.

#### 4. External Timing Output

- a. ext\_equ – cable equalization  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- b. ext\_of – external output signal format  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- c. ext\_osa – external output sa bit location  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- d. extout\_en – external output enabling/disabling  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- e. extout\_prov – external timing output selection  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- f. extout\_ssm – external timing output AIS mode  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- g. frcdus – forced DNU/DUS  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- h. loopdelay – timing regenerator loop delay  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- i. qlout\_tais – acceptance quality level for output threshold AIS  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- j. regen\_loop – timing regenerator loop  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- k. timing – ASAP name

See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.

**Output format** After receiving the SET-SYNCN command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

After successful receiving the SET-SYNCN command a REPT DBCHG database change notification is returned. This notification consists the same parameter as per delivered by the command. Notifications are sent whenever a user-provisionable parameter has been changed.

When the system receives a SET-SYNCN command with changing of the clock mode, a REPT EVT report event notification is returned.

If the system receives a SET-SYNCN command with changing of the active timing reference, a REPT EVT report event notification is returned.

It is not possible to assign a reference from a protection port in a protection group.

If the system synchronization characteristic is SONET and the SSM is invalid the value DUS shall be displayed for QL values.

It is possible to provision a QL acceptance level to the external timing output. If the system quality below this acceptance QL level and QL control is enabled and the external timing output is enabled then an AIS signal or DUS, depending on settings of parameter *extout\_ssm*, shall be substituted in the output.

If the system timing QL mode is DISABLED for SDH all output SSMs shall be set to DNU, for SONET all output SSMs shall be set to STU.

If the system synchronization characteristic is SDH and the external timing input format is either 2MHz or 2Mbit/s unframed or 2Mbit/s

framed without SSM then the assigned timing reference status shall be default SSUT. If the system synchronization characteristic is SONET and the external timing input format is either SF or ESF without SSM then the assigned timing reference status shall be default STU. The value AUTO shall be rejected if SSM is not supported for the assigned timing reference.

It is possible to provision the automatic reference selection process to use the incoming QLs in QL-enabled mode. The input with the highest quality level is selected. If there is more than one input with the same highest quality level, then the input with the highest port priority is selected. In QL-disabled mode the reference selection is working by priority provisioning. It is possible to assign the same priority to multiple inputs. In this case, it implies non revertive switching between the associated references.

A MS-SPRing/BLSR span or MSP pair is handled as one transport port, so also counts as one reference signal. If one of the sections of the pair do not support SSM, the reported QL status is NOT-SUPPORTED.

If the timing port is in the NOT-MONITORED mode then no Timing Link Fail alarm will be active when reference is in FAILED status or no Timing Link Unequipped alarm will be active when the reference is in NOT-CONNECTED state.

#### Example input/output

The following is an example of the SET-SYNCN command for System Timing:

```
SET-SYNCN:LT-UNITE:system:123456:::clkmod=LOCKED,wtr=1MIN;
  LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

The following is an example of the SET-SYNCN command for Assigned Timing Reference:

```
SET-SYNCN:LT-UNITE:extref1:123456:::tref_aid=EXTTMG0,
ql_prov=SSUL;
  LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

The following is an example of the SET-SYNCN command for External Timing Input:

```
SET-SYNCN:LT-UNITE:exttmg1:123456:::ext_if=2MHZ;
    LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

The following is an example of the SET-SYNCN command for External Timing Output:

```
SET-SYNCN:LT-UNITE:exttmg0_out:123456:::ext_of=2MHZ,extout
    _en=ENABLE;
    LT-UNITE 00-11-14 12:00:00
M 123456 COMPLD
;
```

## Error responses

### Validation rule: Timing reference already assigned

If a timing reference already assigned to a timing port or circuit pack the system responds with:

**Error code:** SDNC - Status, Data Not Consistent, reference already assigned

### Validation rule: One timing port for a circuit pack

If a second port of a circuit pack is assigned to a timing reference the system responds with:

**Error code:** SDNC - Status, Data Not Consistent, other port already assigned

### Validation rule: No out-of-service state for timing port

If an 'out of service' port (i.e. the port attribute *servcond* has the value 'OUTOFSERVICE') is assigned to a timing reference the system responds with:

**Error code:** SDNC - Status, Data Not Consistent, port is out-of-service

A port must be in the out-of-service before any port loop can be switched. Therefore it is sufficient to request for a timing reference assignment, that a port is not in the out-of-service state in order to prevent timing loops caused by port loops; i.e. a port that is not in out-of-service state will not have a switched port loop.

**Validation rule: Timing reference from a protection port in a protection group**

If a timing reference shall be assigned from a protection port in a protection group the system responds with:

Error code: SDNC - Status, Data Not Consistent, reference in protection group

**Validation rule: Port is already assigned to another timing reference**

Ports can be assigned only one. If a port already assigned to a timing reference the system responds with:

Error code: SDNC - Status, Data Not Consistent, port already assigned

**Validation rule: Command rejection if quality evaluation disabled**

If the quality mode disabled the setting to forced DUS/DNU or the setting the quality output threshold AIS shall be rejected and the system responds with:

Error code: SDNC - Status, Data Not Consistent, quality evaluation disabled

**Validation rule: SSM not supported**

SSM support shall be rejected for invalid input or output format types and the system responds with:

Error code: IDNV - Input, Data Not Valid, SSM not supported for this format

**Validation rule: Format not supported for forced DNU/DUS**

DNU/DUS provisioning shall be rejected for invalid output format types and the system responds with:

Error code: IDNV - Input, Data Not Valid, forced DUS not supported for this format

**Validation rule: Input / Output format not supported for Sa bit settings**

Sa bit location setting is rejected for invalid input or output format types and the system responds with:

Error code: IDNV - Input, Data Not Valid, Sa bit location not supported

**Validation rule: SSM not supported if timing port provisioned AUTO**

If a timing port provisioned AUTO and the reference which is being assigned does not support SSM, the assignment request is rejected and the system responds with:

Error code: IDNV - Input, Data Not Valid, SSM not supported for provisioned QL

**Validation rule: Output type not supported for AIS mode**

If the AIS mode provisioned to a not supported output type then the system responds with:

Error code: IDNV - Input, Data Not Valid, AIS mode not valid

**Validation rule: Cable equalization not supported**

If the cable equalization provisioned to a not supported output type or if the system synchronization characteristic is SDH then the system responds with:

Error code: IDNV - Input, Data Not Valid, cable equalization not supported

**Validation rule: Timing clock mode inconsistent**

If the NE receives a command with FREE-RUNNING provisioning while the clock mode switch request state is forced holdover, the following error response is returned:

Error code: SNVS, Not in Valid State, timing clock mode inconsistent

**Validation rule: Regenerator loops with SETG as timing output**

If the output timing source selection is set to SETG and the timing regenerator loop is provisioned, then the system responds with:

Error code: IDNV - Input, Data Not Valid, no regen loop with SETG as timing output

**Related TL1 messages**

- “RTRV-SYCN: Retrieve synchronization” (10-3)
- “OPR-SYCN: Operate synchronization switch” (10-31)
- “RLS-SYCN: Release synchronization switch” (10-37)

**References** GR-833-CORE



## SET-SYNCN notification

---

**Output format**     Syntax: The SET-SYNCN notification has the following specific syntax:

SET-SYNCN:*aid::spec\_block*

### Output parameters

#### Command parameters

1. aid – access identifier  
See definition in “SET-SYNCN: Set synchronization” (10-19) of aid – access identifier

#### Spec block parameters

1. System Timing
  - a. clkmod – clock mode  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
  - b. syncmsg – system synchronization status messaging mode  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
  - c. timing – ASAP name  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
  - d. wtr – wait to restore  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
2. Assigned Timing Reference
  - a. extout\_pri – timing output reference priority  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
  - b. ql\_prov – quality provisioned  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
  - c. syncref\_pri – system timing reference priority  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
  - d. timing – ASAP name

- See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.
- e. tpmode – timing port mode monitoring  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
  - f. tref\_aid – timing reference assigned port AID  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section Assigned Timing Reference of this parameter.
3. External Timing Input
- a. ext\_if – external input signal format  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Input of this parameter.
  - b. ext\_isa – external input sa bit location  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Input of this parameter.
  - c. ext\_issm – external input ssm support  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Input of this parameter.
4. External Timing Output
- a. ext\_equ – cable equalization  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
  - b. ext\_of – external output signal format  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
  - c. ext\_osa – external output sa bit location  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
  - d. extout\_en – external output enabling/disabling  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
  - e. extout\_prov – external timing output selection  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
  - f. extout\_ssm – external timing output AIS mode  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.

- g. frcdus – forced DNU/DUS  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- h. loopdelay – timing regenerator loop delay  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- i. qlout\_tais – acceptance quality level for output threshold AIS  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- j. regen\_loop – timing regenerator loop  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section External Timing Output of this parameter.
- k. timing – ASAP name  
See definition in “RTRV-SYNCN: Retrieve synchronization” (10-3) section System Timing of this parameter.

**Example output**

The following is an example of the SET-SYNCN notification for System Timing:

```
LT-UNITE 00-11-16 12:00:00
A 000 REPT DBCHG
"TIME=12-00-00,DATE=00-11-16:SET-SYNCN:SYSTEM::wtr=2MIN"
;
```

The following is an example of the SET-SYNCN notification for Assigned Timing Reference:

```
LT-UNITE 00-11-16 12:00:00
A 000 REPT DBCHG
"TIME=12-00-00,DATE=00-11-16:SET-SYNCN:LINE2::ql_
prov=PRC"
;
```

The following is an example of the SET-SYNCN notification for External Timing Input:

```
LT-UNITE 00-11-16 12:00:00
A 000 REPT DBCHG
"TIME=12-00-00,DATE=00-11-16:SET-SYNCN:EXTTMG0::ext_
isa=SA5,
ext_if=2MBIT-FRAMED"
```

;

The following is an example of the SET-SYNCN notification for External Timing Output:

```
LT-UNITE 00-11-16 12:00:00
A 000 REPT DBCHG
"TIME=12-00-00,DATE=00-11-16:SET-SYNCN:EXTTMG1_OUT::q1_
out=SEC,
extout_ssm=AISMODE"
;
```



## OPR-SYNCNSW: Operate synchronization switch

---

The OPR-SYNCNSW command can be initiated by user to request the NE to operate manual or forced synchronization reference protection switch or external timing output protection switch (for SDH only), to lockout synchronization reference or external output timing (for SDH only) switching or to request a change from the provisioned synchronization mode to forced holdover state.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1  
Abortable: No

**Input format** Command Syntax: OPR-SYNCNSW-*modifier*:*tid*::*ctag*::*sc*[,*dest*];

### Input parameters

#### Command parameters

1. *modifier* – modifier  
This parameter indicates the management system on which the switch request acts.  
The *modifier* REF specifies the assigned timing reference switch. The *modifier* MOD specifies the clock mode switch of the system clock. The *modifier* OUTREF specifies the external timing output switch (for SDH only).  
Type: Alphanumeric value set  
Range:
  - REF
  - MOD
  - OUTREF
 Default: Not applicable.
2. *tid* – target identifier  
See definition of this parameter in “RTRV-HDR: Retrieve header” (5-8).
3. *ctag* – correlation tag  
See definition of this parameter in “RTRV-HDR: Retrieve header” (5-8).

4. sc – switch command

This parameter defines the type of switch action that is initiated on the timing reference or mode.

The following values are valid depending on parameter *modifier*.

- **modifier** REF: LOCKOUT – The reference which is addressed by the *dest* parameter, will be locked out by the user and cannot be used as a timing reference signal until the lockout is cleared. FRCD – A forced switch is initiated. It forces selection of the specified reference determined by the *dest* parameter. MAN – A manual switch is initiated to the specified reference determined by the *dest* parameter. CLRWTR – The wait to restore period of the reference which is addressed by the *dest* parameter will be terminated. The signal status will return to normal.
- **modifier** MOD: FRCD – A forced switch is initiated. It forces system timing from the locked mode to the holdover mode (Clock Backup Request).
- **modifier** OUTREF (for SDH only): LOCKOUT – The reference which is addressed by the *dest* parameter, will be locked out by the user and cannot be used for external timing output until the lockout is cleared. FRCD – A forced switch for external timing output is initiated. It forces selection of the specified reference determined by the *dest* parameter. MAN – A manual switch for the external timing output is initiated to the specified reference determined by the *dest* parameter.

LOCKOUT has the highest priority, followed by FRCD, then MAN.

Type: Alphanumeric value set.

Range:

- LOCKOUT
- FRCD
- MAN
- CLRWTR.

Default: Not applicable.

5. dest – destination

This parameter specifies the assigned timing reference identifier destination. This is the list of timing references available to the system clock or to the timing link switch of the external output timing. This parameter is valid and required for the REF and OUTREF modifiers.

Type: AID

Range:

- **modifier** REF: External\_timing\_ref\_AID, Line\_timing\_ref\_AID
  - **modifier** OUTREF (for SDH only): Line\_timing\_ref\_AID
- Default: Not applicable.

**Output format**

After receiving the OPR-SYNCNSW command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

The OPR-SYNCNSW command generates no REPT DBCHG Report Database Change notification. The OPR-SYNCNSW command returns a REPT EVT Report Event notification in consequence of a protection switch notification.

**Clock backup request**

**Forced Holdover:** The forced switch of system clock to holdover external request causes the system clock to be switched to holdover regardless of the state of the timing references. The following parameter is affected by the clock mode switch request Forced Holdover: – clkmod\_stat = FORCED-HOLDOVER.

**System timing reference or output timing switch request**

**Forced Switch:** The forced switch to timing reference external switch request causes the system to be switched to the selected timing reference regardless of the state of that timing reference. While in the Forced Switch state the system may not switch the active timing

reference, neither automatically nor by means of the Forced Switch or Manual Switch command.

**Manual Switch:** The manual switch to timing reference external request causes the system to be switched to the selected timing reference. The system leaves the Manual Switch state by means of the Clear, Lockout or Forced Switch commands. While in the Manual Switch state the system may switch the active timing reference automatically if required for protection switching, the system leaves the Manual Switch state due to automatic switching.

**Lockout:** The Lockout of reference external request is provided to allow manual disabling of individual references. While in the Lockout state the system may not switch the active timing reference to the reference, which is locked out.

The following parameters are affected by the system timing reference switch request:

- active\_ref = [External\_timing\_ref\_AID, Line\_timing\_ref\_AID]
- refsw\_stat = [FORCED, MANUAL]
- ref\_lock = LOCKOUT
- ref\_stat = NORMAL.

The following parameters are affected by the external output timing switch request:

- active\_oref\_stat = Line\_timing\_ref\_AID
- orefswr\_stat = [FORCED, MANUAL]
- sclkref\_lockstat = LOCKOUT.

### Example input/output

The following is an example of the OPR-SYNCNSW command for System Timing with *modifier* MOD:

```
OPR-SYNCNSW-MOD:LT-UNITE::123456::FRCD;  
    LT-UNITE 00-11-09 12:00:00  
M 123456 COMPLD  
;
```

The following is an example of the OPR-SYNCNSW command for System Timing with *modifier* REF:

```
OPR-SYNCNSW-REF:LT-UNITE::123456::MAN,EXTREF1;  
    LT-UNITE 00-11-09 12:00:00  
M 123456 COMPLD
```



;

The following is an example of the OPR-SYNCNSW command for Output Timing with *modifier* OUTREF:

```
OPR-SYNCNSW-OUTREF:LT-UNITE::123456::LOCKOUT,LINE3;  
    LT-UNITE 00-11-09 12:00:00  
M 123456 COMPLD  
;
```

**Error responses** See definition in “RTRV-HDR: Retrieve header” (5-8) command error responses section for general validation rules.

**Validation rule: Parameter *sc* or *dest* is missing**

If the system receives a OPR-SYNCNSW command with modifiers REF or OUTREF and one of the parameters *sc* or *dest* are missing, the system responds with:

Error code: SNVS - Status, Not in Valid State, parameter required

**Validation rule: Invalid switch command**

If the system receives a command with a *sc* value that is not supported, the system responds with:

Error code: IDNV - Input, Data Not Valid, invalid *sc*

**Validation rule: Reference switching during lockout or disabled state**

If the system receives a switch command to reference which is locked out or disabled, the system responds with:

Error code: SNVS - Status, Not in Valid State, reference unavailable

**Validation rule: Clear wait to restore timer not applicable**

If the system receives a clear request for a wait to restore timer while the reference is not in wait to restore state, the system responds with:

Error code: SNVS - Status, Not in Valid State, clear request impossible

**Validation rule: Parameter not supported for modifier**

If the system receives a OPR-SYNCNSW command with *modifier* MOD together with not supported parameter *dest*, the system responds with:

**Error code:** IDNV - Input, Data Not Valid, parameter not required

**Validation rule: Clock backup switch request when clock mode is free running**

If the system receives a OPR-SYNCNSW command with *modifier* MOD while the provisioned synchronization mode is free running, the system responds with:

**Error code:** SSRD - Status, Switch Request Denied, clock mode inconsistent

**Validation rule: No change of the request state, request not practicable**

If the system receives a switch command that results in no change to the switch request state or the active unit state, the system responds with:

**Error code:** SNVS - Status, Not in Valid State, request not practicable

**Validation rule: Forced or manual switch request while reference is in forced state**

If the system receives a manual or forced switch request to a reference which is already in forced state, the system responds with:

**Error code:** SNVS - Status, Not in Valid State, request not practicable

#### Related TL1 messages

- “RLS-SYNCNSW: Release synchronization switch” (10-37)
- “SET-SYCN: Set synchronization” (10-19)
- “RTRV-SYCN: Retrieve synchronization” (10-3)

**References** GR-833-CORE



## RLS-SYNCNSW: Release synchronization switch

---

The RLS-SYNCNSW command can be initiated by user to request the management system to release (clear) any existing lockout, forced or manual timing reference switching or external output timing switch or to release the forced request on the timing mode so that it will return to the provisioned locked mode from the holdover mode.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M4  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: RLS-SYNCNSW-*modifier*:*tid*::*ctag*::[*dest*];

### Input parameters

#### Command parameters

1. *modifier* – modifier  
See definition of *modifier – modifier* in “OPR-SYNCNSW: Operate synchronization switch ” (10-31).
2. *tid* – target identifier  
See definition of *tid – target identifier* in “RTRV-HDR: Retrieve header” (5-8).
3. *ctag* – correlation tag  
See definition of *ctag – correlation tag* in “RTRV-HDR: Retrieve header” (5-8).
4. *dest* – destination  
See definition of *dest – destination* in “OPR-SYNCNSW: Operate synchronization switch ” (10-31).  
When the parameter *dest* is omitted with *modifier* REF or OUTREF the system clears a manual or forced timing reference or external output timing switch request state.

**Output format** After receiving the RLS-SYNCNSW command, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

The RLS-SYNCNSW command generates no REPT DBCHG Report Database Change notification. The RLS-SYNCNSW command returns a REPT EVT Report Event notification in consequence of a protection switch notification.

**Clear clock backup request**

The system clock leaves the Forced Holdover state by means of the RLS-SYNCNSW command with *modifier* MOD without parameter. The Clear Mode Switch request removes any active external request and does not affect the state of the automatic protection switching based on synchronization reference failure. The following parameter is affected by release of the clock mode switch Forced Holdover: – clkmod\_stat = NORMAL.

**Clear system timing reference or output timing switch request**

The Clear Reference Switch command removes any active external request as is clear the Lockout, Forced Switch and Manual Switch conditions. The Clear Reference Switch command does not affect the state of the automatic protection switching based on synchronization reference failure, except for its effect on Wait to Restore. The Clear Reference Switch invokes the management system to terminate the wait to restore period for the specified timing reference and may be used to clear Wait to Restore. The signal status will revert to NORMAL.

**Forced Switch:** The system leaves the Forced Switch state by means of the OPR-SYNCNSW command with *sc* value LOCKOUT, or RLS-SYNCNSW command.

**Manual Switch:** The system leaves the Manual Switch state by means of the OPR-SYNCNSW command with *sc* value LOCKOUT, or OPR-SYNCNSW command with *sc* value FRCD, or RLS-SYNCNSW command.

**Lockout:** The system leaves the Lockout state by means of the RLS-SYNCNSW command. The following parameters are affected by release of the system timing reference switch:

- active\_ref = [External\_timing\_ref\_AID, Line\_timing\_ref\_AID]
- refsw\_stat = NO-REQUEST
- ref\_lock = NO-LOCKOUT
- ref\_stat = NORMAL

The following parameters are affected by release of the external output timing switch request:

- active\_oref\_stat = Line\_timing\_ref\_AID
- orefswr\_stat = NO-REQUEST
- sclkref\_lockstat = NO-LOCKOUT

#### Example input/output

The following is an example of the RLS-SYNCNSW command for System Timing with *modifier* MOD:

```
RLS-SYNCNSW-MOD:LT-UNITE::123456::;  
    LT-UNITE 00-11-09 12:00:00  
M 123456 COMPLD  
;
```

The following is an example of the RLS-SYNCNSW command for System Timing with *modifier* REF:

```
RLS-SYNCNSW-REF:LT-UNITE::123456::EXTREF1;  
    LT-UNITE 00-11-09 12:00:00  
M 123456 COMPLD  
;
```

The following is an example of the RLS-SYNCNSW command for Output Timing with *modifier* OUTREF:

```
RLS-SYNCNSW-OUTREF:LT-UNITE::123456::;  
    LT-UNITE 00-11-09 12:00:00  
M 123456 COMPLD  
;
```

#### Error responses

See definition in “RTRV-HDR: Retrieve header” (5-8) command error responses section for general validation rules and in “OPR-SYNCNSW: Operate synchronization switch ” (10-31) command error responses section for specific validation rules.

**Related TL1 messages**

- “OPR-SYNCNSW: Operate synchronization switch” (10-31)
- “SET-SYCN: Set synchronization” (10-19)
- “RTRV-SYCN: Retrieve synchronization” (10-3)

**References** GR-833-CORE



## Protection switch notification

---

**Output format**     Syntax: The REPT EVT notification has following specific syntax:  
 REPT EVT *modifier aid:condtype,condeff,ocrdat,ocrtm,,,conddescr*

### Output parameters

#### System timing

1. Clock Mode Protection Type
  - a. modifier – message modifier  
 This parameter indicates on which entity the report event belongs.  
 Type: Alphanumeric value set.  
 Range: SYST (means System Timing).
  - b. aid – access identifier  
 This parameter indicates on which AID the report event belongs.  
 Type: Alphanumeric value set.  
 Range: SYSTEM
  - c. condtype – condition type  
 This parameter specifies the type of event being reported.  
 Type: alphanumeric value set.  
 Range: See Table 10-1, “Range of condtype (clock mode protection type)” (10-42).  
 Default: none
  - d. conddescr – description of the condition  
 This parameter is a textual description of the condition.  
 Type: inner string.  
 Range: See Table 10-2, “Range of conddescr (clock mode protection type)” (10-42).
2. Timing Reference Protection Type
  - a. modifier – message modifier  
 See definition above.
  - b. aid – access identifier  
 This parameter indicates on which AID the report event belongs. The values all or *someprefix* all are not allowed in this context.  
 Type: Alphanumeric value set.  
 Range: External\_timing\_ref\_AID, Line\_timing\_ref\_AID

- c. **condtype** – condition type  
This parameter specifies the type of event being reported.  
Type: alphanumeric value set.  
Range: See Table 10-3, “Range of condtype (timing reference protection type)” (10-42).
- d. **conddescr** – description of the condition  
This parameter is a textual description of the condition.  
Type: inner string.  
Range: See Table 10-4, “Range of conddescr (timing reference protection type)” (10-43).

**Table 10-1 Range of condtype (clock mode protection type)**

| Selection State     | Attribute                                            | Condtype   |
|---------------------|------------------------------------------------------|------------|
| free running        | clkmod = FREE-RUNNING<br>clkmod_stat = NORMAL        | FRNGSYNC   |
| forced holdover     | clkmod = LOCKED<br>clkmod_stat = FORCED-HOLDOVER     | HLDOVRSYNC |
| autonomous holdover | clkmod = LOCKED<br>clkmod_stat = AUTONOMOUS-HOLDOVER | HLDOVRSYNC |
| locked              | clkmod = LOCKED<br>clkmod_stat = NORMAL              | SYNCCLK    |

**Table 10-2 Range of conddescr (clock mode protection type)**

| Selection State     | Conddescr                                      |
|---------------------|------------------------------------------------|
| free running        | Protection switch, clock mode, Freerunning     |
| forced holdover     | Protection switch, clock mode, Forced Holdover |
| autonomous holdover | Protection switch, clock mode, Holdover        |
| locked              | Protection switch, clock mode, Locked          |

**Table 10-3 Range of condtype (timing reference protection type)**

| Selection State / Lockout State | Attribute               | Condtype |
|---------------------------------|-------------------------|----------|
| manual                          | refsw_stat = MANUAL     | PS       |
| forced                          | refsw_stat = FORCED     | PS       |
| no request                      | refsw_stat = NO-REQUEST | PS       |
| lockout                         | ref_lock = LOCKOUT      | INHSWPR  |
| no lockout                      | ref_lock = NO-LOCKOUT   | INHSWPR  |



**Table 10-4 Range of conddescr (timing reference protection type)**

| Selection State / Lockout State | Conddescr                                        |
|---------------------------------|--------------------------------------------------|
| manual                          | Protection switch, sync reference, Manual switch |
| forced                          | Protection switch, sync reference, Forced switch |
| no request                      | Protection switch, sync reference, No Request    |
| lockout                         | Protection switch, sync reference, Lockout       |
| no lockout                      | Protection switch, sync reference, No Lockout    |

**Output timing (only for SDH)****1. Output Timing Reference Protection Type**

- a. modifier – message modifier  
This parameter indicates on which entity the report event belongs.  
Type: Alphanumeric value set.  
Range: OUTT (means Output Timing).
- b. aid – access identifier  
This parameter indicates on which AID the report event belongs. The values all or *someprefix* all are not allowed in this context.  
Type: Alphanumeric value set.  
Range: Line\_timing\_ref\_AID.
- c. condtype – condition type  
This parameter specifies the type of event being reported.  
Type: alphanumeric value set.  
Range: See Table 10-5, “Range of condtype (Output timing reference protection type)” (10-43).
- d. conddescr – description of the condition  
This parameter is a textual description of the condition.  
Type: inner string  
Range: See Table 10-6, “Range of conddescr (Output timing reference protection type)” (10-44).

**Table 10-5 Range of condtype (Output timing reference protection type)**

| Selection State / Lockout State | Attribute             | Condtype |
|---------------------------------|-----------------------|----------|
| manual                          | orefswr_stat = MANUAL | PS       |
| forced                          | orefswr_stat = FORCED | PS       |

**Table 10-5 Range of condtype (Output timing reference protection type) (continued)**

| Selection State / Lockout State | Attribute                     | Condtype |
|---------------------------------|-------------------------------|----------|
| no request                      | orefswr_stat = NO-REQUEST     | PS       |
| lockout                         | sclkref_lockstat = LOCKOUT    | INHSWPR  |
| no lockout                      | sclkref_lockstat = NO-LOCKOUT | INHSWPR  |

**Table 10-6 Range of conddescr (Output timing reference protection type)**

| Selection State / Lockout State | Conddescr                                         |
|---------------------------------|---------------------------------------------------|
| manual                          | Protection switch,output reference, Manual switch |
| forced                          | Protection switch,output reference, Forced switch |
| no request                      | Protection switch,output reference, No Request    |
| lockout                         | Protection switch,output reference, Lockout       |
| no lockout                      | Protection switch,output reference, No Lockout    |

**Example output** The following is an example of a protection switch notification for clock mode protection type:

```
LT-UNITE 00-11-09 12:00:00
A 000 REPT EVT SYST
"SYSTEM:HLD0VRSYNC,TC,11-09,12-00-00,,,:\"Protection
switch,clock mode,Forced Holdover\"";
```

The following is an example of a protection switch notification for timing reference protection type:

```
LT-UNITE 00-11-09 12:00:00
A 000 REPT EVT SYST
"EXTREF1:PS,TC,11-09,12-00-00,,,:\"Protection
switch,sync reference,Manual switch\"";
```

The following is an example of a protection switch notification for output timing reference protection type:

```
LT-UNITE 00-11-09 12:00:00
A 000 REPT EVT OUTT
"LINE2:INHSWPR,SC,11-09,12-00-00,,,:\"Protection
switch,output reference,Lockout\"";
```

;



## Autonomous notifications

---

### **System initialization with default values**

After first system initialization for all parameters the described default values are valid and no timing reference is assigned. No database change notification will be returned during database auto creation.

### **System initialization after system synchronization characteristic change**

It is possible to change the system synchronization characteristic later on. For this case, the system will behave as a new created node. All assigned timing references are un-assigned before and after changing in the MCOND state the system will start-up with the default values. No database change notification will be returned after changing the system synchronization characteristic and reset to default values.

### **Autonomous clock switch**

If the provisioned clockmod = LOCKED and a failure of all timing references active, the system switches in autonomous-holdover state and return a report event and a report alarm notification to the management system. If at least one fault-free timing reference is available, the system switches back to the locked state autonomously. The following parameter are affected by the autonomous clock mode switch: clkmod\_stat = [AUTONOMOUS-HOLDOVER, NORMAL].

### **Autonomous reference switch for system timing**

The autonomous reference switching is initiated by the failure of a reference. The autonomous reference switching results also after a SSM change of the active reference or of any of the standby references. The choice for the next active timing reference primarily depends on provisioned QL values if QL mode is enabled and subsequent on provisioned priorities for each reference. In consequence of identical QL values and priorities the system supports non-revertive switching. The autonomous reference switch returns a protection switch notification for System Timing. The following parameter are affected by the autonomous timing reference switch: active\_ref = [External\_timing\_ref\_AID, Line\_timing\_ref\_AID].

### **Autonomous reference switch for output timing (only for SDH)**

The autonomous reference switching is initiated by the failure of a reference. The autonomous reference switching might also switch after a SSM change. The choice for the next active timing reference is primarily depending on provisioned QL values if QL mode is enabled and subsequent on provisioned priorities for each reference. In consequence of similar QL values and priorities the system supports non-revertive switching. The autonomous reference switch returns a protection switch notification for Output Timing. The following

parameter are affected by the autonomous timing reference switch:  
active\_oref\_stat = Line\_timing\_ref\_AID.

**Synchronization instances**

The following instances are created during system initialization:

- one system timing entity
- one output timing entity (only for SDH)
- two timing reference entities for external timing input
- six timing reference entities for line timing for

SDH only:

- one external timing output port entity

for SONET only:

- two external timing output port entities.







# 11 TL1 messages - software & database management

## Overview

---

**Purpose** This section contains the TL1 interface definition for the domain *software and database management*.

**Background information:** In the Non Volatile Memory (NVM) of the NE, there are two regions: current and previous. Each region contains a software generic (code and static data) and a database.

The properties of the databases and the software generics can be retrieved by RTRV-PRMTR-DATA and RTRV-PRMTR-SFTWR.

The restore option of CPY-MEM is used to copy a database from a remote file store into previous NVM and then to install it as the working database. The backup option of CPY-MEM is used to copy the database that is in current NVM to a remote file store.

The download option of CPY-MEM is used to download new generics to previous NVM. Installation via APPLY causes the contents of previous NVM to be installed. Following installation, a "pointer" is changed so that what is identified as current NVM contains the currently executing generic and previous NVM contains the previous generic.

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| CPY-NEM Notification                          | <a href="#">11-31</a> |
| COPY-RFILE: Copy remote file                  | <a href="#">11-33</a> |
| REPT EVT FXFR: Report Event FXFR              | <a href="#">11-39</a> |
| APPLY: Apply software generic                 | <a href="#">11-42</a> |
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## RTRV-PRMTR-DATA: Retrieve parameter data

---

The RTRV-PRMTR-DATA command retrieves information about the databases being in NVM. It identifies the databases' release numbers and provides also other information such as their states.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
 Priority: 2  
 Abortable: No

**Input format** Command Syntax: RTRV-PRMTR-DATA:*tid::ctag::[amount]*;

### Input parameters

#### Command parameters

1. tid- Target Identifier  
 Refer to the "RTRV-HDR: Retrieve header" (5-8) command for the input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
 Refer to the "RTRV-HDR: Retrieve header" (5-8) command for the input parameter syntax and description of this parameter.
3. amount – Amount Of Data To Return  
 This parameter specifies whether the current generic or previous generic or both shall be returned. If a value is omitted, then the current (active) generic is returned.  
 Type: alphanumeric value set.  
 Range: CURRENT (default), PREVIOUS, ALL.  
 Default: CURRENT.

**Output format** The following normal completion response is returned, if the RTRV-PRMTR-DATA request completes successfully:

```
sid date time
M ctag COMPLD
  "nvm:spec_block"
  ...
  ...
  "nvm:spec_block"
```

;

### Output parameters

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Output parameters section for a normal completion response. The output parameters listed there also apply to the RTRV-PRMTR-DATA command. Additional parameters that specifically apply to this command are defined in the following:

1. nvm – Non Volatile Memory Identifier

This parameter specifies the region of non volatile memory data (current or previous).

Type: Value set.

Range:

- NVM-A: for current NVM Data
- NVM-B: for previous NVM-Data.

Default: Only current NVM data is reported except for *amount* having been specified to ALL.

### Spec block parameters

This parameter provides information about the stored database. It contains the parameters *release*, *size*, *backuptime*, *restoretime*, *backupfile*, *restorefile*, *priorbackuptime*, *priorbackupfile*, *priorrestoretime*, *priorrestorefile*, *state*, *tid* and *serialnumber*.

When software is being downloaded to previous NVM, the database parameters for NVM-B do not need initialization because they still reflect information pertaining to the currently executing generic.

During installation, the following parameters are omitted (initialized to a blank field) for NVM-A:

*backuptime*, *restoretime*, *backupfile*, *restorefile*, *priorbackuptime*, *priorrestoretime*, *priorbackupfile*, *priorrestorefile*.

When a backup is performed for the database in current NVM, the values of *restoretime*, *restorefile*, *priorbackuptime*, *priorbackupfile* shall not be modified.

1. release – Release Number

This parameter represents the release number contained in the file. The parameter will be omitted if state is 'INITIAL'.

Type: value set of the form x.y.z

Range: x, y, z are integer numbers from 00 to 99 in two-digit form, that means leading zeros are not suppressed. x shall not be 00.

2. size – Size Of Allocated NVM

This parameter indicates the allocated NVM size in bytes.

It is not dynamically updated within the generic until data migration or software upgrade which may change the budget of NVM space used for database files.

Type: numeric string

Range: 0 to 999999999

Default: In case the software generic on the NVM is empty, the value 0 is reported.

3. backuptime

This parameter provides time and date when the last backup to a remote file store has been finished. It is omitted if the system has never been backed up.

The NE updates *backuptime* at the OS just before file transfer starts and then update the value of current NVM's *backuptime* when the backup finishes.

This implies the value of *backuptime* contained in backupfile at the OS will represent a slightly earlier time than the value contained in current NVM's database.

*backuptime* is updated whether or not the file transfer was successful.

Type: value set of the format: YY-MM-DD HH-MM-SS.

Range: Y, M, D are numbers in two-digit format (i.e. leading zeros are not suppressed). YY represents the last two digits of the year, MM the month, DD the day of the month. H, M, S are numbers in two-digit format (i.e. leading zeros are not suppressed). HH represents the hour, MM the minutes, SS the seconds.

4. *restoretime*

This parameter reflects the time and date when the last restore from a remote file store has been finished. It is omitted, if the system has never been restored.

When a backup is performed for the database in current NVM, the values of *restoretime* (in current NVM, previous NVM) are not modified.

Only database files at the current or previous NVMs shall have values for *restoretime*.

Type: value set of the format: YY-MM-DD HH-MM-SS

Range: Y, M, D are numbers in two-digit format (i.e. leading zeros are not suppressed). YY represents the last two digits of the year, MM the month, DD the day of the month. H, M, S are numbers in two-digit format (i.e. leading zeros are not suppressed). HH represents the hour, MM the minutes, SS the seconds.

5. *backupfile*

This parameter indicates the remote location where the last backup is stored. Omitted if never backed up.

The NE will update *backupfile* before the file transfer starts. Thus, both the source (current NVM) and the destination (Navis<sup>®</sup> Optical EMS or WaveStar<sup>®</sup> CIT) will have the same value for *backupfile*.

Type: text string.

Range: The parameter has one of the following formats:

- *"CIT,filename"*
- *"EMS,filename"*
- *"FTTD",FTP URL"*

The syntax contained in *filename* should be consistent with the file system. For a DOS file system, back slashes (\) should be used. For a UNIX file-system, forward slashes (/) should be used. Because a (\) is interpreted as the escape character, it will be represented in the output reply as a double backslash (\\).

The FTP URL must be in the format:

ftp://[<login>[:<password>]@]<host>[:<port>]/<file\_name>

- <login>: default value: "anonymous"
- <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.

- <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0..255.
- <port>: this is the port number of the FTP server, given when deviating from the standard port number 21.
- <file\_name>: the complete path name of the file.

6. **restorefile**

This parameter reflects the remote location where the last restore came from. Omitted if never restored.

When a backup is performed for the database in current NVM, the values of **restorefile** (in current NVM, previous NVM, the destination) will not be modified.

**restorefile** is updated whether or not the file transfer was successful.

Type: text string.

Range: **restorefile** has one of the following formats:

- **"CIT,filename"**
- **"EMS,filename"**
- **"FTTD",FTP URL"**

The syntax contained in **filename** should be consistent with the file system. For a DOS file system, back slashes (\) should be used. For a UNIX file-system, forward slashes (/) should be used. Because a (\) is interpreted as the escape character, it will be represented in the output as a double backslash (\\).

The FTP URL must be in the format:

ftp://[<login>[:<password>]@]<host>[:<port>]/<file\_name>

- <login>: default value: "anonymous"
- <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.
- <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0..255.
- <port>: this is the port number of the FTP server, given when deviating from the standard port number 21.
- <file\_name>: the complete path name of the file.

7. priorbackuptime

This parameter gives the time and date when the next-to-last backup to a remote file store finished. It is omitted, if there is no next-to-last-backup.

When a backup is performed for the database in current NVM, the values of *priorbackuptime* (in current NVM, previous NVM, the destination) will not be modified.

Type: value set of the format: YY-MM-DD HH-MM-SS

Range: Y, M, D are numbers in two-digit format (i.e. leading zeros are not suppressed). YY represents the last two digits of the year, MM the month, DD the day of the month. H, M, S are numbers in two-digit format (i.e. leading zeros are not suppressed). HH represents the hour, MM the minutes, SS the seconds.

Default: n. a.

8. priorrestoretime

This parameter specifies the time and date when the next-to-last restore from a remote file store finished. It is omitted, if there is no next-to-last restore.

Type: value set of the format: YY-MM-DD HH-MM-SS.

Range: Y, M, D are numbers in two-digit format (i.e. leading zeros are not suppressed). YY represents the last two digits of the year, MM the month, DD the day of the month. H, M, S are numbers in two-digit format (i.e. leading zeros are not suppressed). HH represents the hour, MM the minutes, SS the seconds.

9. priorbackupfile

This parameter indicates the remote location where the next-to-last backup is stored. It is omitted, if there is no next-to-last backup.

When a backup is performed for the database in current NVM, the values of *priorbackupfile* (in current NVM, previous NVM, the destination) will not be modified.

Type: text string

Range: *priorbackupfile* has one of the following formats:

- *"CIT.filename"*
- *"EMS.filename"*
- *"FTTD",FTP URL"*

The syntax contained in *filename* should be consistent with the file system. For a DOS file system, back slashes (\) should be used. For a UNIX file system, forward slashes (/) should be used. Because a (\) is interpreted as the escape character, it will be represented in the output reply as a double backslash (\\).

The FTP URL must be in the format:

ftp://[<login>[:<password>]@]<host>[:<port>]/<file\_name>

- <login>: default value: "anonymous"
- <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.
- <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0..255.
- <port>: this is the port number of the FTP server, given when deviating from the standard port number 21.
- <file\_name>: the complete path name of the file.

10. priorrestorefile

This parameter reflects the remote location where the next-to-last restore came from. It is omitted, if there is no next-to-last restore.

Type: text string

Range: *priorrestorefile* has one of the following formats:

- *"CIT.filename"*
- *"EMS.filename"*
- *"FTTD",FTP URL"*

The syntax contained in *filename* should be consistent with the file system. For a DOS file system, back slashes (\) should be used. For a UNIX file-system, forward slashes (/) should be used. Because a (\) is interpreted as the escape character, it will be represented in the output reply as a double backslash (\\).

The FTP URL must be in the format:

ftp://[<login>[:<password>]@]<host>[:<port>]/<file\_name>

- <login>: default value: "anonymous"
- <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.
- <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0..255.
- <port>: this is the port number of the FTP server, given when deviating from the standard port number 21.
- <file\_name>: the complete path name of the file.

11. state – State of the Database

This parameter describes the state of the database per NVM region:

- CORRUPT (current, previous): Unavailable for invocation or execution.(e.g. corrupted check sum)
- DOWNLOADED (previous): Applies to the previous bin of database. Database just downloaded or ready for installation.
- INITIAL (current): Nothing in NVM.
- INITIAL (previous): Nothing in previous partition of NVM.
- INPROGRESS (current): Backup or restore in progress.
- INPROGRESS (previous): Restore is in progress.
- PREVIOUS (previous): A previously active database.
- RUNNING (current): The currently active database.

The normal database states of current NVM are: RUNNING and INPROGRESS. Most of the time its state is equal to RUNNING, signifying that it contains a copy of the database that is currently in use. When a backup or a restore makes the NVM inaccessible, current NVM will have a database state of INPROGRESS.

The normal database states of previous NVM are: PREVIOUS and INPROGRESS. Most of the time its state is equal to PREVIOUS, signifying that it contains a copy of the database that was used with the previous generic. When a restore makes the NVM inaccessible, previous NVM will have a database state of INPROGRESS.

If an NVM has never contained a database, then the



RTRV-PRMTR-DATA output for that NVM will consist of *state* INITIAL and size 0.

If an NVM is failed or missing, then RTRV-PRMTR-DATA will report only the state output variable for that NVM. *state* will have the value CORRUPT.

Type: alphanumeric value set.

Range: CORRUPT, DOWNLOADED, INITIAL, INPROGRESS, PREVIOUS, RUNNING.

Default: INITIAL

12. tid – target identifier

This parameter gives the TID that was stored in this NVM. The parameter will be omitted if state is INITIAL.

This parameter is not evaluated in the NE. *serialnumber* will be used to check whether database belongs to correct NE.

See “RTRV-HDR: Retrieve header” (5-8) for allowable tid values and details.

13. serialnumber – serial number

This parameter gives the NE serial number from the database control information showing to which NE the database belongs to. Comparing this serial number with the actual NE serial number from the backplane EEPROM may help troubleshooting when being in maintenance mode. The parameter will be omitted if state is INITIAL.

Type: alphanumeric value set.

Range: 12 times the space character or the 12 byte serial number of electronic label.

Default: 12 times the space character.

**Example input/output**

In the following example for the RTRV-PRMTR-DATA command, current NVM contains a copy of the RUNNING database. The database was last backed up at 9:00 and the backup was to *WaveStar*® CIT:

```
RTRV-PRMTR-DATA:LT-UNITE::123456;  
LT-UNITE 00-11-01 09:45:28  
M 123456 COMPLD  
"NVM-A:release=01.02.04,size=8234567,backuptime=  
00-11-01 09-00-00,backupfile=\"CIT,\\data\\00_11_01B  
\\",priorbackuptime=00-11-01 08-00-00,priorbackupfile=  
\"CIT,\\data\\00_11_01A\\",state=running,tid=LT-UNITE,  
serialnumber=01NB12345678"
```

;

Refer to the “RTRV-HDR: Retrieve header” (5-8) command’s error responses section. The error responses listed there apply also to the RTRV-PRMTR-DATA command.

### **Related TL1 messages**

- “APPLY: Apply software generic” (11-42)
- “CPY-MEM: Copy memory” (11-20)
- “RTRV-PRMTR-SFTWR: Retrieve parameter software” (11-13)



## RTRV-PRMTR-SFTWR: Retrieve parameter software

---

The RTRV-PRMTR-SFTWR command retrieves information about the software generics being in NVM. It identifies the generics' release number and provides also other information such as its state.

RTRV-PRMTR-SFTWR can be used to determine what generic is currently executing. It can also be used to determine what generic was previously executing. If a generic was downloaded but not installed, then the output describes the downloaded generic instead of the previously executing generic.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 2  
Abortable: No

**Input format** Command Syntax: RTRV-PRMTR-SFTWR:*tid*::*ctag*::[*amount*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. *amount* – Amount Of Data To Return  
Refer to the “RTRV-PRMTR-DATA: Retrieve parameter data” (11-3) command for the input parameter syntax and description of this parameter.

**Output format** If the NE fully complies with the RTRV-PRMTR-SFTWR command and the *amount* request is specified to all, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
"nvm:spec_block"
...
```

```
...  
"nvm:spec_block"  
;
```

**Output parameters** Refer to the “RTRV-HDR: Retrieve header” (5-8) command output parameters section for a normal completion response. The output parameters listed there also apply to the RTRV-PRMTR-SFTWR command. Additional parameters that specifically apply to this command are defined in the following:

1. **nvm** – non volatile memory identifier  
This parameter specifies the version of NVM software (current or previous).  
Type: value set.  
Range: NVM-A for Current NVM-Software, NVM-B for Previous NVM-Software.  
Default: Only current NVM software is reported except for *amount* having been specified to ALL.

#### **Spec block parameters**

This parameter provides information about the stored software. It contains the parameters *release*, *size*, *supplier*, *type*, *delivered*, *installed*, *path*, *state*.

1. **release** – Release Number  
This parameter represents the software release number contained in the file.  
Type: value set of the form x.y.z  
Range: x, y, z are integer numbers from 00 to 99 in two-digit form, that means a leading zeros are not suppressed. x shall not be 00.  
Default: 01.00.00.
2. **size** – Program Size  
This parameter indicates the software generic size in bytes.  
Type: numeric string.  
Range: 0 to 999999999.  
Default: In case the software generic on the NVM is empty, the value 0 is reported.

3. supplier  
This parameter provides the supplier of generic.  
Type: value set.  
Range: 0 to 128 characters  
Default: Lucent..
4. type – System Type  
This parameter specifies the type of system.  
Type: value set  
Range: WaveStar\_UNITE  
Default: WaveStar\_UNITE.
5. delivered  
This parameter specifies the time and date when the download finished.  
Type: value set of the format: YY-MM-DD HH-MM-SS.  
Range: Y, M, D are numbers in two-digit format (i.e. leading zeros are not suppressed). YY represents the last two digits of the year, MM the month, DD the day of the month. H, M, S are numbers in two-digit format (i.e. leading zeros are not suppressed). HH represents the hour, MM the minutes, SS the seconds.  
Default: 00-01-01 00-00-00.
6. installed  
This parameter specifies date and time when the installation started.  
Type: value set of the format: YY-MM-DD HH-MM-SS  
Range: Y, M, D are numbers in two-digit format (i.e. leading zeros are not suppressed). YY represents the last two digits of the year, MM the month, DD the day of the month. H, M, S are numbers in two-digit format (i.e. leading zeros are not suppressed). HH represents the hour, MM the minutes, SS the seconds.  
Default: 00-01-01 00-00-00.
7. path  
This parameter specifies the location in a remote file system from where the SW Generic has been downloaded. In the case of a factory installed SW generic the parameter shall have the value "LUCENT".  
Type: text string.

Range: The path parameter has one of the following formats (see description for details):

- "CIT,psel,ssel,tsel,nsap,filename"
- "EMS,psel,ssel,tsel,nsap,filename"
- "FTTD,psel,ssel,tsel,nsap,FTP URL"
- "LUCENT"

The sizes for *psel*, *ssel*, *tsel*, *nsap* are as follows:

- *psel* (path selector): 0-4 bytes (0-8 hex characters)
- *ssel* (section selector): 0-4 bytes (0-8 hex characters)
- *tsel* (transport selector): 0-16 bytes (0-32 hex characters)
- *nsap* (network service access point): 20 bytes ( 40 hex characters).

There can only be an even number of hex characters since they are generated from bytes and each byte corresponds to 2 hex characters.

From MSB (Most Significant Byte) to LSB (Least Significant Byte), these bytes are (the number in parenthesis equals the number of bytes): IDP(3), DFI(1), ORG(3), RES(2), RD(2), AREA(2), SYS(6), SEL(1). The SEL field of the *nsap* is also called the NSEL.

The syntax contained in *filename* should be consistent with the file system. For a DOS file system, back slashes (\) should be used. For a UNIX file-system, forward slashes (/) should be used. Because a (\) is interpreted as the escape character, it will be represented in the RTRV-PRMTR-SFTWR output as a double backslash (\\).

When the WaveStar® CIT is used to enter a file name for download backup, or restore, the craft is not required to enter a double backslash; the WaveStar® CIT software will enter the extra backslash into the TL1 CPY-MEM command.

For FT-TD *psel*, *ssel*, *tsel* and *nsap* of the GNE is reported. The FTP URL contains the CIT or EMS and the filename.

The FTP URL must be in the format:

ftp://[<login>[:<password>]@]<host>[:<port>]/<file\_name>

- <login>: default value: "anonymous"
- <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.

- <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0..255.
- <port>: this is the port number of the FTP server, given when deviating from the standard port number 21.
- <file\_name>: the complete path name of the file.

8. state

This parameter describes the state of the generic per NVM region:

state (NVM):description

- CORRUPT (current, previous): Unavailable for invocation or execution.(e.g. corrupted check sum)
- DOWNLOADED (previous): Applies to the previous bin of database. Database just downloaded or ready for installation.
- INITIAL (current): Nothing in NVM.
- INITIAL (previous): Nothing in previous partition of NVM.
- INPROGRESS (current): Backup or restore in progress.
- INPROGRESS (previous): Restore is in progress.
- PREVIOUS (previous): A previously active database.
- RUNNING (current): The currently active database.

The normal (as contrasted with CORRUPT) states of current NVM are: RUNNING and INPROGRESS. The state is usually equal to RUNNING, signifying that it contains a copy of the generic that is currently executing. When an installation is in progress, current NVM will have a state of INPROGRESS.

The normal states of previous NVM are: PREVIOUS, DOWNLOADED and INPROGRESS. INPROGRESS means that a download is in progress. When the download terminates successfully, the state transitions to generic is installed, the NVM pointer is adjusted, and the NVM partition then identified as previous NVM will have the state set to PREVIOUS.

If an NVM has never contained a software generic, then the RTRV-PRMTR-SFTWR output for that NVM will consist of State=INITIAL.

If an NVM is corrupt, failed or missing, the RTRV-PRMTR-SFTWR output for that NVM will consist only of a single line

**Example input/output** In the following example for the RTRV-PRMTR-SFTWR command, current NVM has a copy of the executing program (normal condition), and previous NVM has a copy of the previous generic. Also, it was assumed, that the *WaveStar*<sup>®</sup> CIT is DOS based and *Navis*<sup>®</sup> Optical EMS UNIX based. This was done to illustrate the different formats for path. Notice that the current and previous NVM indicate the same number for free (and also unavailable) space since current and previous information is stored in the same physical NVM.

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error responses section. The error responses listed there also apply to the RTRV-PRMTR-SFTWR command.

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**Related TL1 messages**

- “APPLY: Apply software generic” (11-42)
- “CPY-MEM: Copy memory” (11-20)
- “RTRV-PRMTR-DATA: Retrieve parameter data” (11-3)



# CPY-MEM: Copy memory

---

The CPY-MEM command can be used to initiate a file transfer to/from an NE. The file transfer is intended to

- download a new software generics to the NE, or
- to backup the NE's database, or
- to restore the NE's database.

The actual file transfer can use one of the following file transfer applications:

- FTAM
- FTP
- FT-TD (file transfer translation device).

and is determined by the use of the from and to parameters.

CPY-MEM utilizing the Transport Service Bridge (TSB) is not supported.

Note: The support of a certain file transfer application is release specific and additionally dependent on the network configuration (e.g. when one GNE is configured to be a FT-TD, FT-TD can be used for file transfers to/from remote NEs).

**Properties**      Login privilege  
                      User Privilege Code (UCFC/UCAL): S4  
                      Priority: 2  
                      Abortable: No

**Input format**      Command Syntax: CPY-MEM:*tid::ctag::from,[src],to,[dst],class*;

## Input parameters

### Command parameters

1. tid – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

## 3. from – from memory type

This parameter specifies the memory where the data is being transferred from.

Type: text string.

Range:

- "PRI" , PRImary NVM of the NE. Although there is no secondary NVM, PRI is used for compatibility reasons
- "CIT,*psel,sssel,tsel,sap*" , CIT means Craft Interface Terminal ( *WaveStar*® CIT)
- "EMS,*psel,sssel,tsel,nsap*" , EMS means Element Management System ( *Navis*® Optical EMS)
- "FTTD, *psel, ssel, tsel, nsap*" FTTD (file transfer translation device)

*sel, ssel, tsel*, and *nsap* are part of the from (and to) parameter and specify NSAP and selectors of the *WaveStar*® CIT or *Navis*® Optical EMS or the GNE in case of FTTD. The sizes of *sel, ssel, tsel*, and *nsap* are as follows: *psel* (path selector): 0-4 bytes (0-8 hex characters); *sssel* (session selector): 0-4 bytes (0-8 hex characters); *tsel* (transport selector): 0-16 bytes (0-32 hex characters); *nsap* (network service access point): 20 bytes (40 hex characters).

There can only be an even number of hex characters since they are generated from bytes and each byte corresponds to 2 hex characters.

## 4. src – source

This parameter reflects the source where the database or software is being transferred from. It is omitted if *class*=BACKUP.

Type: text string

Range: 1 to 128 characters, format is a valid complete directory name , or an FTP URL on the system ( *Navis*® Optical EMS or *WaveStar*® CIT) from which the file is transferred.

Because backslash (\) is the TL1 escape character, to include a backslash as part of a directory name, it must be entered as a double backslash. A double backslash counts as only one character. Craft personnel will not have to type the double backslash for the GUI. The second backslash is automatically generated.

The FTP URL must be in the format:

ftp://[<login>[:<password>]@]<host>[:<port>]/<file\_name>

- <login>: default value: "anonymous"
- <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.
- <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0..255.
- <port>: this is the port number of the FTP server, given when deviating from the standard port number 21.
- <file\_name>: the complete path name of the file.

Examples of valid file names are: "d:\bwm\data\file1.dat" or "/bwm/generic/01\_02\_15.prog".

#### 5. to – to memory type

This parameter specifies the memory where the data is being transferred to.

Type: text string.

Range:

- "PRI" , PRImary NVM of the NE. Although there is no secondary NVM, PRI is used for compatibility reasons
- "CIT,*psel*,*ssel*,*tsel*,*sap*" , CIT means Craft Interface Terminal ( WaveStar® CIT)
- "EMS,*psel*,*ssel*,*tsel*,*nsap*" , EMS means Element Management System ( Navis® Optical EMS)
- "FTTD, *psel*, *ssel*, *tsel*, *nsap*", FTTD (file transfer translation device).

*tsel*, *ssel*, *tsel*, and *nsap* are part of the from (and to) parameter and specify NSAP and selectors of the WaveStar® CIT or Navis® Optical EMS or the GNE in case of FTTD.

The sizes of *tsel*, *ssel*, *tsel*, and *nsap* are as follows: *psel* (path selector): 0-4 bytes (0-8 hex characters); *ssel* (session selector): 0-4 bytes (0-8 hex characters); *tsel* (transport selector): 0-16 bytes (0-32 hex characters); *nsap* (network service access point): 20 bytes (40 hex characters).

There can only be an even number of hex characters since they are generated from bytes and each byte corresponds to 2 hex characters.

6. **dst** – destination directory name  
This parameter reflects the destination where the database is being transferred to.  
It is omitted if **class=DOWNLOAD** or **class=RESTORE**.  
See parameter **src**. Those requirements also apply to this parameter **dst**.
7. **class** – Class Of The Copy  
This parameter specifies the class of the copy:
  - **DOWNLOAD**: download the program
  - **BACKUP**: copy the database to a backup location
  - **RESTORE**: restore the database from a backup location.
 Type: alphanumeric value set.  
Range: **DOWNLOAD**, **BACKUP**, **RESTORE**.

**Output format** If the NE fully complies with the CPY-MEM command, then the NE sends the following normal completion response after the copy has been completed:

```

      sid date time
M  ctag COMPLD
;
```

**Output parameters** Refer to the “RTRV-HDR: Retrieve header” (5-8) command output parameters section for a normal completion response. The output parameters listed there also apply to the CPY-MEM command.

### Detailed behavior description

#### Generation of REPT DBCHG message

The CPY-MEM command generates a REPT DBCHG message.

#### Program download capability

The CPY-MEM command can be used to download software generics. The **DOWNLOAD** option of CPY-MEM is used to download new generics which are stored in the previous region of NVM.

A directory or URL is specified for the source (see **src** parameter).

Installation via **APPLY** causes the contents of previous NVM to be installed. Following installation, a “pointer” is changed so that what is

identified as current NVM contains the currently executing generic and previous NVM contains the previous generic.

### **Backup capability**

The BACKUP option of the CPY-MEM command can be used to backup the database from the current region of NVM to a destination which is located at the *WaveStar*® CIT or *Navis*® Optical EMS.

A directory or URL is specified for the destination (see *dst* parameter).

### **Restore capability**

The RESTORE option of the CPY-MEM command can be used to restore the database from a source at the *WaveStar*® CIT or *Navis*® Optical EMS.

A directory or URL must be specified for the source (see *src* parameter).

The database is copied from a file store into previous region of NVM and then installed as the working database.

There are two phases to database restoration: copying the database from the source (e.g. the *WaveStar*® CIT) to NVM and then installing the database from NVM to working memory. The first phase takes much longer than the second.

### **Restore causes database installation**

If CPY-MEM is used to restore a database to NVM, the NE will return COMPLD before the CTL controller reset.

The automatic installation of the database for a RESTORE is in contrast with the manual installation (via APPLY) of software required after a DOWNLOAD.

After the database has been installed to working memory, the working database contains provisioning that was in the restoration directory.

### **File transfer requires a checksum**

A file that is transferred via the CPY-MEM command should contain one or more checksums to help validate that the file has not been corrupted.

### **Restore uses previous NVM**

When CPY-MEM is used to restore a database, the previous region of NVM is used as an intermediate storage.

This minimizes the effect of copying to NVM since the current region of NVM is still available for database updates. Also, if communications fail during the copy to previous NVM, the current database is still available.

## Provisioned vs. actual configuration

After a database restoration, if there is a discrepancy between the actual and provisioned CPs, then an alarm will be issued telling the craft about the discrepancy, but the NVM will not be altered automatically.

Example of discrepancy: The hardware indicates that an OC-48 pack is in slot 6, while the provisioned values in NVM indicate that a OC-192 pack should be in that slot. A CP mismatch alarm will be raised.

### Example input/output

The following examples show input and output of CPY-MEM commands.

The following example shows a CPY-MEM request that downloads a new generic from the *Navis*<sup>®</sup> Optical EMS to PRI. To cause *prgm* to execute, the APPLY command must be used.

```

CPY-MEM:LT-UNITE::123456::"EMS,02,04,02,
39840F80000000000000000000008006A19784500","/unite/
release1/prgm","PRI",,DOWNLOAD;
      LT-UNITE 00-11-01 08:00:00
M 123456 COMPLD
:

```

The following example shows a CPY-MEM request that backups the database in NVM to the *WaveStar*<sup>®</sup> CIT and stores it in a directory named data in a location named 00 11 01.

```
CPY-MEM:LT-UNITE::123456::"PRI",,"CIT,01,01,03,
39840F800000000000000000000000008006A13244500","\\data
\\00_11_01",BACKUP;
      LT-UNITE 00-11-02 08:00:00
M 123456 COMPLD
;
```

The following example shows a CPY-MEM command that restores the database from the *WaveStar*® CIT:

CPY-MEM:LT-UNITE::123456::"CIT,01,01,03,

```
CPY-MEM:LT-UNITE::123456:: "FTTD,01,01,03,  
39840F80000000000000000000008006A132445500",,"PRI",  
"ftp://johndoe:passwd@ftphost.company.com/directory  
/00_11_01",DOWNLOAD;  
    LT-UNITE 00-11-02 08:00:00  
M 123456 COMPLD  
;
```

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error response section. The error responses listed there also apply to the CPY-MEM command. Additional error responses that specifically apply to this command are defined in the following:

If any one or more of the input parameter values are not valid, the system responds with:

Error code: IDNV - Input, Data Not Valid



The following parameter combinations are allowed based on the file transfer application:

|       | class    | from                                                    | src   | to                                                      | dst   |
|-------|----------|---------------------------------------------------------|-------|---------------------------------------------------------|-------|
| FTAM  | DOWNLOAD | "CIT,psel,ssel,tsel,nsap";<br>"EMS,psel,ssel,tsel,nsap" | <dir> | "PRI"                                                   | -     |
|       | BACKUP   | "PRI"                                                   | -     | "CIT,psel,ssel,tsel,nsap";<br>"EMS,psel,ssel,tsel,nsap" | <dir> |
|       | RESTORE  | "CIT,psel,ssel,tsel,nsap"<br>"EMS,psel,ssel,tsel,nsap"  | <dir> | "PRI"                                                   | -     |
|       |          |                                                         |       |                                                         |       |
| FT-TD | DOWNLOAD | "FTTD,psel,ssel,tsel,nsap"                              | <URL> | "PRI"                                                   | -     |
|       | BACKUP   | "PRI"                                                   | -     | "FTTD,psel,ssel,tsel,nsap";                             | <URL> |
|       | RESTORE  | "FTTD,psel,ssel,tsel,nsap"                              | <URL> | "PRI"                                                   | -     |

#### Validation rule: Invalid file or directory name

If the command failed due to

- an invalid directory or
- an invalid source file or
- file store not found or
- file access denied,

the system responds with:

Error code: SDNC - Status, Data not consistent, invalid file or directory

#### Validation rule: Source product type does not match network product type

If a product type of the source does not match the product type of the NE, the system responds with:

Error code: SDNC - Status, Data not consistent

#### Validation rule: Insufficient file space

If the command failed due to insufficient file space, the system responds with:

Error code: ENEQ - Equipage, Not Equipped, insufficient file space

**Validation rule: NVM size sufficient for database with NN objects**

The system shall verify that the installed NVM has a capacity > 256 Mbytes during an attempt to restore a database containing NN objects. Otherwise the following error shall be reported:

Error Code: SNVS - Status, Not in Valid State, NVM size not sufficient.

**Validation rule: Product mismatch**

If the command failed due to a product mismatch in a retrieved file (file does not belong to NE type), the system responds with:

Error code: SRAC - Status, Requested Access Configuration invalid, retrieved file NE mismatch

**Validation rule: Temporary exhaustion of resources**

If the system is experiencing temporary exhaustion of allocated resources because

- all resources are busy or
- a CPY-MEM request is issued and a previous CPY-MEM has not finished or a resource is busy for other reasons,

the system responds with:

Error code: SARB - Status, All Resources Busy

**Validation rule: External communication failure**

If the command failed due to an external communications failure, the system responds with:

Error code: SROF - Status, Requested Operation Failed, external communications failure

The following list identifies conditions that will cause an SROF error response as given above:

- FTAM error
- External communication failure
- Unsuccessful file transfer

**Validation rule: Transferred file is deemed invalid**

If the transferred file is deemed invalid for miscellaneous reasons such as incorrect checksum, invalid control information, etc., the system responds with:

Error code: SROF - Status, Requested Operation Failed, unsuccessful file transfer

**Validation rule: Generic not available**

If the command failed because the generic is not available, the system responds with:

Error code: ENSG - Equipage, Not Software Generic, generic not available

The following condition will cause this ENSG error response:

- Not a software generic file.

**Validation rule: Directory not accessible**

If a directory is specified that cannot be found or cannot be accessed due to improper privileges, the system responds with:

Error code: IENE - Input, Entity Not Exists

**Validation rule: Deemed source file**

If a source file is deemed invalid for miscellaneous reasons such as incorrect checksum, invalid control information, etc., the system responds with:

Error code: SNVS - Status, Not in Valid State

**Validation rule: Directory/URL not specified**

If CPY-MEM specifies a DOWNLOAD or RESTORE and no directory/URL is specified in *src* or if it specifies a BACKUP and no directory/URL is specified in *dst*, then the following error response is given:

Error code: ICNV - Input, Command Not Valid, file must be specified

**Validation rule: Additional directory/URL specified**

If CPY-MEM specifies a DOWNLOAD or RESTORE and *dst* is not empty, or if it specifies a BACKUP and *src* is not empty:

Error code: SDNC - Status, Data Not Consistent

**Related TL1 messages**

- “APPLY: Apply software generic” (11-42)
- “RTRV-PRMTR-DATA: Retrieve parameter data” (11-3)
- “RTRV-PRMTR-SFTWR: Retrieve parameter software” (11-13)

- “RTRV-NE: Retrieve NE” (12-5)
- “ED-NE: Edit NE” (12-8)



## CPY-NEM Notification

---

**Output format** The output parameters *sid*, *date*, *time*, and *atag* are described in the REPT DBCHG notification.

Command Syntax: CPY-MEM::*from*,[*src*],*to*,[*dst*],*class*;

### Output parameters

#### Command parameters

1. from - from memory type  
Refer to the “CPY-MEM: Copy memory” (11-20) for the description of this parameter.
2. src – source  
See definition of input parameter *src* in “CPY-MEM: Copy memory” (11-20).
3. to – to memory type  
See definition of input parameter *to* in “CPY-MEM: Copy memory” (11-20).
4. dst – destination directory name  
See definition of input parameter *dst* in “CPY-MEM: Copy memory” (11-20).
5. class – Class Of The Copy  
See definition of input parameter *class* in “CPY-MEM: Copy memory” (11-20).

**Example output** The following is an example for a CPY-MEM notification after a software download:

```
LT-UNITE 00-11-01 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:CPY-MEM::\"EMS,02,04,
02,39840F800000000000000000000000008006A19784500\", \"
/unite/release1/prgm\", \"PRI\", ,DOWNLOAD\"
;
```

The following is an example for a CPY-MEM notification after a DB restore (before the NE resets):

```
LT-UNITE 00-11-01 15:00:00
A 000 REPT DBCHG
```

☐

## COPY-RFILE: Copy remote file

---

The COPY-RFILE command can be used to initiate remotely a file transfer to/from an NE. The file transfer is intended to download a new software generics to the NE.

The actual file transfer can use the following file transfer applications:

- FTAM
- FTP
- FT-TD (file transfer translation device).

Note: The support of a certain file transfer application is release specific and additionally dependent on the network configuration (e.g. when one GNE is configured to be a FT-TD, FT-TD can be used for file transfers to/from remote NEs).

**Properties**      User Privilege Code (UCFC/UCAL): S4  
                      Priority: 2  
                      Abortable: No.

**Input format**      Command Syntax: CPY-RFILE:*tid::ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.

#### Spec block parameters

- type – type and direction of the file transfer

This parameter specifies the type and direction of the file transfer:

- SWDL: SW Download (
- RFR: Remote File Restore, restore the database from a backup location
- RFBU: Remote File Backup, copy the database to a backup location

At the moment only SWDL is supported.

Type: alphanumeric value set.

Range: SWDL.

- **src** – the source of the file  
**src** is the source where the database (*xfertype*=RFR) or software (*xfertype*=SWDL) is being transferred from. It is omitted if *xfertype*=RFBU.

Type: text string;

Range: 1 to 128 characters, format is a FTP URL or FTAM URL address on the system (EMS or CIT) from which the file is transferred

The FTP URL must be in the format:

ftp://[<login>[:<password>]@]<host>[:<port>]/<path\_name>

- <login>: default value: "anonymous"
- <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.
- <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0..255.
- <port>: this is the port number of the FTP server, given when deviating from the standard port number 21.
- <path\_name>: The complete path name, where the files are located.

The FTAM URL must be in the format:

ftam://[<nsap\_address>]/<path\_name>

- <nsap\_address>: network service access point address of the host, which consists of 20 bytes (40 hex characters)
- <path\_name>: The complete path name, where the files are located.

Examples of valid path name are: "/bwm/generic/01\_02\_15",  
 "C:\\Program Files\\Lucent Technologies\\WaveStar"



- **dest** – destination of the file  
*dest* is the destination where the database is being transferred to. It is omitted if xfer type=SWDL. See parameter *src*. Those requirements also apply to this parameter *dest*.
- **ovwrt**  
This parameter indicates whether or not the files should overwrite an existing file located at the destination.  
Type: alphanumeric value set.  
Range: YES (default(- Overwrite existing file of same directory location and filename. NO - Do not overwrite file, fail the file transfer if file already exists.
- **fttd** – file transfer translation device  
This parameter specifies the file transfer translation device (FTTD).  
Type: text string.  
Range: 1 to 128 characters, format is a FTDD gateway address. The FTDD address must be in the format:  
  - fttd://<nsap\_address>  
 <nsap\_address>: network service access point address of the host, which consists of 20 bytes (40 hex characters). There can only be an even number of hex characters since they are generated from bytes and each byte corresponds to 2 hex characters.

**Output format**      The NE sends the following normal completion response just prior to initiating the requested file transfer:

```

sid date time
M ctag COMPLD
;
```

**Output parameters**      Refer to the “RTRV-HDR: Retrieve header” (5-8) command output parameters section for a normal completion response. The output parameters listed there also apply to the CPOY-RFILE command.

### Detailed behavior description

#### Program download capability

The COPY-RFILE command can be used to download software generics. The DOWNLOAD option of COPY-RFILE is used to

download new generics which are stored in the previous region of NVM. A directory or URL shall be specified for the source (see srcurl parameter).

When the COPY-RFILE command is received by the NE, a confirmation or rejection must be returned immediately. The NE must ensure it recognizes the file/s it will be downloading and, when applicable, that there is enough space to store, uncompress, and install the file/s. So, the initial response will indicate the NEs imminent actions.

As an FTP client, the network element will use the information included in the TL1 command to establish an FTP session with Transport Element Activation Manager, being the FTP server.

Installation via APPLY causes the contents of previous NVM to be installed. Following installation, a "pointer" is changed so that what is identified as current NVM contains the currently executing generic and previous NVM contains the previous generic.

#### **File transfer requires a checksum**

A file that is transferred via the COPY-RFILE command should contain one or more checksums to help validate that the file has not been corrupted.

#### **Example input/output**

The following examples show input and output of COPY-RFILE commands: The following example shows a COPY-RFILE request that downloads a new generic from the manager to NVM of the NE by FTP with the help of a FTTP device. To cause prgm to execute, the APPLY command must be used.

```
COPY-RFILE:LT-UNITE::123456:::TYPE=SWDL,
SRC="ftp://user:pwd@128.218.128.281:21/vender/
model/release1",
FTTD="fttd://39840f80000000000000000000000000601D0D50E01d",
OVWRT=YES;
    LT-UNITE 00-11-01 08:00:00
M 123456 COMPLD
;
```

The following example shows a COPY-RFILE request that downloads a new generic from the manager to NVM of the NE by FTAM. To cause prgm to execute, the APPLY command must be used.

```
COPY-RFILE:LT-UNITE::123456:::TYPE=SWDL,
```

```
SRC="ftam://39840F8000000000000000000000000010a4fab861d/  
C:\\Program Files\\Lucent Technologies\\WaveStar CIT\\  
generics\\susi030042",OVWRT=YES;  
    LT-UNITE 00-11-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error response section. The error responses listed there also apply to the COPY-RFILE command. Additional error responses that specifically apply to this command are defined in the following:

**Validation rule: Input parameters not specified**

If any one or more of the input parameter values are not valid, the system responds with:

Error code: IDNV - Input, Data Not Valid

**Validation rule: Insufficient file space**

If the command failed due to insufficient file space, the system responds with:

Error code: ENEQ - Equipage, Not Equipped, insufficient file space

**Validation rule: Product mismatch**

If the command failed due to a product mismatch in a retrieved file (file does not belong to NE type), the system responds with:

Error code: SRAC - Status, Requested Access Configuration invalid, retrieved file NE mismatch

**Validation rule: Temporary exhaustion of resources**

If the system is experiencing temporary exhaustion of allocated resources because

- all resources are busy or
- a CPY-MEM request is issued and a previous CPY-MEM has not finished or a resource is busy for other reasons,

the system responds with:

Error code: SARB - Status, All Resources Busy

**Validation rule: Directory/URL not specified**

If COPY-RFILE specifies a SWDL and no directory/URL is specified by *src*, then the following error response is given:

Error code: ICNV - Input, Command Not Valid, file must be specified

**Validation rule: FT-TD device not specified**

If COPY-RFILE used FTP for SWDL no FT-TD device (*nsap*) is specified by *fttd*, then the following error response is given:

Error code: ICNV - Input, Command Not Valid, FT-TD must be specified

**Validation rule: Additional directory/URL specified**

If COPY-RFILE specifies a SWDL and *dst* is not empty:

Error code: SDNC - Status, Data Not Consistent

**Related TL1 messages**

- “APPLY: Apply software generic” (11-42)
- “RTRV-PRMTR-DATA: Retrieve parameter data” (11-3)
- “RTRV-PRMTR-SFTWR: Retrieve parameter software” (11-13)
- “RTRV-NE: Retrieve NE” (12-5)
- “ED-NE: Edit NE” (12-8)



## REPT EVT FXFR: Report Event FXFR

---

REPT EVT FXFR is an autonomous message that is used to report remote file transfer activities.

**Output format** The general format of a REPT EVT FXFR autonomous message is as follows:

```
sid date time
A atag REPT EVT FXFR
  "filename,fxfr_status[,fxfr_rslt][,bytes_xfrd]";
```

### Output parameters

#### Command parameters

1. atag – Automatic Tag  
Refer to the “REPT ALM: Report alarm” (6-44) message.
2. filename  
This parameter identifies the name of the file transferred.  
Type: text string.  
Range: 1 to 128 characters.
3. fxfr\_status  
This parameter indicates the file transfer status.  
Type: alphanumeric value set.  
Range:
  - START, indicates file transfer has started
  - IP, indicates file transfer is In-Progress; optional
  - COMPLD, indicates file transfer has completed.
4. fxfr\_rslt  
This parameter indicates success or failure of the file transfer.  
This parameter is only displayed when the file transfer has completed (that is., *fxfr\_status* is COMPLD).  
Type: alphanumeric value set.

Range:

- SUCCESS, indicates successful file transfer
- FAILURE, indicates failed file transfer.

5. fxfr\_xfrd

Number of bytes transferred for IP and total number of bytes for COMPLD.

Type: alphanumeric value set.

**Detailed behavior description**

After the initial response to the COPY-RFILE command by the NE, the autonomous message must be used to communicate any kind of event. So, if the connection or file transfer fails, the autonomous message must be sent with a failure indication. Once the file has been completely downloaded, the autonomous message must then be sent with a successful indication.

**Reasons of transmit failure - external communication failure**

If the command failed due to an external communications failure.

The following list identifies conditions that will cause an SROF error response as given above:

- External communication failure
- Unsuccessful file transfer.

**Reasons of transmit failure - transferred file is invalid**

If the transferred file is deemed invalid for miscellaneous reasons such as incorrect checksum, invalid control information, etc., the system shall respond with fxfr\_rslt=FAILURE.

**Reasons of transmit failure - Generic not available**

If the command failed because the generic is not available, the system shall respond with fxfr\_rslt=FAILURE. The following condition will cause this ENSG error response: Not a software generic file.

**Reasons of transmit failure - Directory not accessible**

If a directory is specified that cannot be found or cannot be accessed due to improper privileges, the system shall respond with fxfr\_rslt=FAILURE.

**Reasons of transmit failure - Product mismatch**

If the command failed due to a product mismatch in a retrieved file (file does not belong to NE type), the system shall respond with fxfr\_rslt=FAILURE.

**Example input/output**    The following example shows an autonomous message REPT EVT FXFR for starting a file transfer :

```
LT-UNITE-123 00-01-01 08:00:00
A 003 REPT EVT FXFR
"/UNITE/release4,START,8051"
;

LT-UNITE-123 00-01-01 08:00:00
A 003 REPT EVT FXFR
"/UNITE/release4,IP,2000"
;

LT-UNITE-123 00-01-01 08:00:00
A 003 REPT EVT FXFR
"/UNITE/release4,COMPLD,SUCCESS,8051"
;
```

#### Related TL1 messages

- “APPLY: Apply software generic” (11-42)
- “COPY-RFILE: Copy remote file” (11-33)
- “RTRV-PRMTR-DATA: Retrieve parameter data” (11-3)
- “RTRV-PRMTR-SFTWR: Retrieve parameter software” (11-13)
- “RTRV-NE: Retrieve NE” (12-5)
- “ED-NE: Edit NE” (12-8)



## APPLY: Apply software generic

---

The APPLY command can be used to install a copy of a software generic stored in the NE, overwriting the currently executing software. Installation of the software causes the system to reset.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
 Priority: 2  
 Abortable: No

**Input format** Command Syntax: `APPLY:tid::ctag::[,qualifier];`  
 The two commas before *qualifier* are kept for compatibility reasons for products, for which scheduling of an APPLY command is possible.

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
3. *qualifier*  
 Description: The *qualifier*'s parameters are INSTALL and PREVIOUS.
  - INSTALL causes the software download to be installed. This is the default action if no value is specified for *qualifier*. Prior to installation, the software state must be equal to DOWNLOADED. The software state can be retrieved by RTRV-PRMTR-SFTWR.
  - PREVIOUS forces the generic that is in previous NVM to be installed, even if it has been previously installed.
 Type: alphanumeric value set.  
 Range: INSTALL, PREVIOUS.  
 Default: INSTALL.



**Output format** If the NE fully complies with the APPLY command successfully, then the following completion response is given:

```
sid date time
M ctag COMPLD
/* New software generic installation in progress */
;
```

### Detailed behavior description

#### Installation of a previous generic

The software state, as indicated by the RTRV-PRMTR-SFTWR command, is DOWNLOADED if the generic has been downloaded but not yet successfully installed.

If a generic has been previously installed, then it has a state equal to PREVIOUS.

For a software generic of state equal to PREVIOUS, the APPLY command will be denied unless *qualifier* has the value PREVIOUS.

This helps to prevent an inadvertent second APPLY from replacing the currently executing generic with the previous one.

The PREVIOUS option for APPLY is intended for use as a manual back out and is limited to either of the following cases:

- the previous generic and the current database are compatible
- the previous generic and the previous database are compatible.

Compatibility is ensured by comparison of serial numbers. If the previous generic is incompatible with both databases then the APPLY command will not be successful.

#### APPLY being denied during installation

If an installation is already in progress, then another request for an installation will be denied.

#### Generation of REPT DBCHG message

The APPLY command generates a REPT DBCHG message. This message will be generated before the command causes the system to be reset.

#### Installation recorded in history log

The initiation of an installation is recorded in history log.

**Reactions after installation completed**

When a NE receives an APPLY command and as a result successfully installs a new software generic, the NE loses any command messages that were pending and all alarms are cleared. All performance monitoring bins are cleared, and any conditions are cleared.

**Example input/output**

The following example shows an APPLY command requesting installation of a new generic:

```
APPLY:LT-UNITE::123456;  
    LT-UNITE 00-11-01 09:45:28  
M 123456 COMPLD  
    /* New Software generic installation in progress */  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command error response section. The error responses listed there also apply to the APPLY command. Additional error responses that specifically apply to this command are defined in the following:

**Validation rule: Temporary system exhaustion**

If the system is experiencing temporary exhaustion of allocated resources, the system responds with:

Error code: SARB - Status, All Resources Busy, system limit exceeded

**Validation rule: APPLY already in progress**

If an APPLY request is issued and an installation is already in progress or a resource is busy for other reasons, the system responds with:

Error code: SARB - Status, All Resources Busy

**Validation rule: Non-Hardware system difficulties**

If the command cannot be completed due to system difficulties other than hardware or equipment, the system responds with:

Error code: SROF - Status, Requested Operation Failed

The following list identifies conditions that will cause an SROF error response:

- Install failure

**Validation rule: Generic not available**

If the command failed because the generic is not available, the following error response is returned:

Error code: ENSG - Equipage, Not Software Generic, generic not available

**Validation rule: APPLY applied on corrupted software**

If an APPLY request is entered and an uncorrupted copy of software does not reside in the NE, then the following error response is given:

Error code: SROF - Status, Requested Operation Failed, other system failure

**Validation rule: Second APPLY on same software**

If an APPLY request is entered and the software copy has been previously installed (that is, its state is PREVIOUS), then the following error response is given:

Error code: SNVS - Status, Not in Valid State

To force the installation, *qualifier* should be set to PREVIOUS.

**Validation rule: File inappropriate**

If the type of file is inappropriate for installation to the NE, then the following error response is given:

Error code: SDNC - Status, Data Not Consistent

**Related TL1 messages**

- “CPY-MEM: Copy memory” (11-20)
- “RTRV-PRMTR-DATA: Retrieve parameter data” (11-3)
- “RTRV-PRMTR-SFTWR: Retrieve parameter software” (11-13)



## APPLY notification

---

**Syntax** The APPLY notification has the following specific syntax:

Command Syntax: APPLY:,,*qualifier*;

The output parameters sid, date, time, and atag are described in the REPT DBCHG notification.

### Output parameters

#### Command parameters

1. *qualifier*  
See definition of *qualifier* in “APPLY: Apply software generic” (11-42).

#### Example output

The following is an example for an APPLY notification using the *qualifier* INSTALL:

```
LT-UNITE 00-11-01 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:APPLY::,,INSTALL"
;
```





# 12 TL1 messages - data communications network

## Overview

---

**Purpose** This section contains the TL1 interface definition for the domain *data communications network*.

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# General DCN parameters

## Overview

---

**Purpose** This section describes TL1 messages for DCN which have effects on system wide DCN configurations.

**Contents**

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## RTRV-NE: Retrieve NE

---

The RTRV-NE command retrieves DCN attributes associated with the NE at the system level but not associated with any particular facility or equipment unit.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
 Priority: 1  
 Abortable: Yes.

**Input format** Command Syntax: RTRV-NE:*tid*::*ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
 Description: Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
 Description: Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.  
 Type: CTAG.

**Output format** If the RTRV-NE request is successful, the following normal completion message is returned:

```

sid date time
M ctag COMPLD
":spec_block"
. . .
. . .
. . .
":spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8).

## Output parameters

### Spec block parameters

1. ftamftpgw - File Transfer Translation Device (FT-TD) function  
This parameter is used to enable or disable the File Transfer Translation Device (FT-TD) function.  
Type: Value set.  
Range: ENABLE, DISABLE (default).
2. tl1tcpipgw – TL1 Translation Device (T-TD) function  
This parameter is used to enable or disable the TL1 Translation Device (T-TD) function.  
Type: Value set.  
Range: ENABLE, DISABLE (default).
3. dcnpn – DCN ASAP Profile Name  
This parameter specifies the name of the current ASAP profile used for DCN alarms.  
Type: Alphanumeric string. A hyphen ( - ) is additionally allowed in the name.  
Range: up to 24 characters.  
Default: DEFAULT.

### Detailed behavior description

The command retrieves system parameters as described in the Output parameter section.

### Example input/output

The following example shows the result of a RTRV-NE command:

```
RTRV-NE:LT-UNITE::123456;  
LT-UNITE 00-11-01 08:00:00  
M 123456 COMPLD  
":ftamftpgw=DISABLE"  
":tl1tcpipgw=DISABLE"  
":tunstat=DISABLE"  
":dcnpn=DEFAULT"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-NE command.

**Related TL1 messages** “ED-NE: Edit NE” (12-8)



## ED-NE: Edit NE

---

The ED-NE command is used to activate or de-activate DCN functions associated with the NE at the system level, e.g. the IP tunneling function or the TL1 Translation Device (T-TD) function.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S3  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ED-NE:*tid*::*ctag*:::*spec\_block*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of *tid* in “RTRV-NE: Retrieve NE” (12-5).
2. *ctag* – Correlation Tag  
See definition of *ctag* in “RTRV-NE: Retrieve NE” (12-5).

#### Spec block parameters

1. *ftamftpgw* – File Transfer Translation Device (FT-TD) function  
See definition of *ftamftpgw* in “RTRV-NE: Retrieve NE” (12-5).
2. *tl1tcpipgw* – TL1 Translation Device (T-TD) function  
See definition of *tl1tcpipgw* in “RTRV-NE: Retrieve NE” (12-5).
3. *dcnnpn* – DCN ASAP Profile Name  
See definition of *dcnnpn* in “RTRV-NE: Retrieve NE” (12-5).

**Output format** If the ED-NE command completes successfully, then the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Detailed behavior description**

The command activates or de-activate the DCN function associated with the parameters specified in the *spec\_block* section.

**Disabling *ftamftpgw***

When the parameter *ftamftpgw* is set to DISABLE existing file transfers via FT-TD will be aborted.

**Example input/output**

The following example shows the result of an ED-NE command, where IP tunneling is enabled:

```
ED-NE:LT-UNITE::123456:::tunstat=ENABLE;  
    LT-UNITE 00-11-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-NE command.

**Validation Rule: Check for correct IP configuration**

The request to ENABLE *ftamftpgw*, *tl1tcpipgw* or *tunstat* is only allowed if there is already a valid IP configuration (IP address of LAN1, subnet mask of LAN1, default router) provisioned for the system.

Error code: SNVS - Status, Not in Valid State, incomplete IP configuration

For the specific checks refer to

- ENT-FECOM-LAN, parameter ip\_lanstat
- ENT-FECOM-LAN, parameter ip\_snm
- ENT-ULS, parameter ip\_drad

**Validation Rule: Check for correct TARP configuration**

The request to ENABLE *tl1tcpipgw* shall only be allowed if TARP originator, propagator and responder roles are enabled for node 1.

Error code: SNVS - Status, Not in Valid State, TARP not enabled

### **Related TL1 messages**

- “RTRV-NE: Retrieve NE” (12-5)
- “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40)
- “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)



## ED-NE notification

---

**Output format** The ED-NE notification has the following specific syntax:

ED-NE::*spec\_block*

The output parameters *sid*, *date*, *time*, and *atag* are described in the REPT DBCHG notification.

### Output parameters

1. ftamftpgw – File Transfer Translation Device (FT-TD) function  
See definition of *ftamftpgw* in “RTRV-NE: Retrieve NE” (12-5).
2. tl1tcpipgw – TL1 Translation Device (T-TD) function  
See definition of *tl1tcpipgw* in “RTRV-NE: Retrieve NE” (12-5).
3. dcnpn – DCN ASAP Profile Name  
See definition of *dcnpn* in “RTRV-NE: Retrieve NE” (12-5).

**Example output** The following is an example ED-NE notification in case the *tunstat* function has been enabled:

```
LT-UNITE 00-11-01 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:ED-NE:::tunstat=ENABLE"
;
```



# DCC terminations

## Overview

---

**Purpose** This section describes TL1 commands for section RS-DCC and Line MS-DCC: provisioning, modification and status retrieval.

**Contents**

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## RTRV-FECOM: Retrieve DCC related parameters

---

The RTRV-FECOM command can be initiated by a user to retrieve parameters of Data Communication Channels (DCC) and its attachment to specific OSI nodes.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-FECOM:*tid::ctag::[port],[dcctype]*;

### Input parameters

#### Command parameters

1. **tid** – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. **ctag** – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. **port** – DCC port  
This parameter indicates the port AID of a circuit pack which is used together with *dcctype* to identify the DCC channel.  
Type: AID.  
Range: SPortAID.  
Default: If this field is omitted, the report will include the DCC parameters of all transmission ports belonging to the NE.
4. **dcctype**  
This parameter specifies whether the LINE/MS or SECTION/RS DCC parameters of the *port* shall be reported by the command.  
Type: Alphanumeric value set.  
Range: LINE, SECTION.  
Default: If this parameter is omitted, LINE and SECTION DCC parameters will be considered for the output.

**Output format** If the RTRV-FECOM is successful, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "port,dcctype:spec_block"
    ...
    ...
    ...
  "port,dcctype:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

## Output parameters

### Command parameters

1. port  
See definition of *port* in input parameters sections of “RTRV-FECOM: Retrieve DCC related parameters” (12-13).
2. dcctype  
See definition *dcctype* in input parameters sections of “RTRV-FECOM: Retrieve DCC related parameters” (12-13).

### Spec block parameters

1. dccprottp  
This parameter reports the protection type of the DCC channel. 0X1 means the port is not involved in a protection group or DCC protection switching is disabled. 1+1 means DCC protection switching is enabled: In these case only the active worker line is shown.  
Type: Alphanumeric value set.  
Range: 0X1 (default), 1+1.
2. lapdmode  
This parameter indicates the type of LAPD service. Modes are AITS and UITS. Starting with R2.0 this parameter is also used to determine the service for the LinkID protocol.  
Type: Alphanumeric value set..  
Range:
  - UITS (default)
  - AITS.

## RTRV-FECOM: Retrieve DCC related parameters

### 3. lapdrl

This parameter indicates the LAPD role. This parameter is also used to determine the service for the LinkID protocol.

Type: Alphanumeric value set.

Range:

- USER-SIDE (default)
- NETWORK-SIDE.

### 4. osinode

Assignment of a DCC channel to an MCN node in the NE.

An NE can have up to 8 instances of the OSI stack. Node-1 is default and has a NSAP. Nodes 2-8 have a NET and no SEL (NSAP = NET + SEL, for NET: SEL=00). Nodes 2-8 can be created and configured, see command ENT-ULSDCC-L3.

Type: AID.

Range: osinode{1-8}

### Example input/output

The following example shows the result of RTRV-FECOM:

```
RTRV-FECOM:NE-UNITE::123456::1-1-#-#-5-all,line;
NE-UNITE 00-12-24 11:00:00
M 123456 COMPLD
"1-1-#-#-5-1,LINE:dccstat=ENABLE,lapdmode=UITS,
osinode=osinode1,dccprottp=0X1,"
;
```

### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-FECOM command.

### Related TL1 messages

- “ENT-FECOM: Enter DCC channel related parameters” (12-16)
- “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27)



## ENT-FECOM: Enter DCC channel related parameters

---

The ENT-FECOM command allows to enable or disable a DCC channel for a specific OSI node or the SCN node. It can also be used to modify the the type of LAPD service of an existing DCC channel.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S3

Priority: 1

Abortable: No.

**Input format** Command Syntax: ENT-FECOM:*tid*::*ctag*::*port*[*dcctype*]:[*spec\_block*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. *port*  
This parameter indicates the port AID of a circuit pack which is used together with *dcctype* to identify the DCC channel.  
Type: AID.  
Range: SPortAID; the keyword *all* is not allowed.
4. *dcctype*  
This parameter specifies whether the LINE/MS or SECTION/RS DCC of the *port* is affected by the command.  
Type: Alphanumeric value set  
Range:
  - LINE
  - SECTION (default).

#### Spec block parameters

1. *dcstat*  
This parameter indicates whether communication over the DCC channel is enabled or disabled.  
Type: Alphanumeric value set.

## ENT-FECOM: Enter DCC channel related parameters

Range:

- ENABLE
- DISABLE (default).

Note: One and only one of the parameters *dcn\_stat* or *scn\_dccstat* must be present and set to ENABLED when any other spec\_block parameter is changed.

### 2. lapdmode

See definition of *lapdmode* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13)

### 3. lapdrl

See definition of *lapdrl* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).

### 4. osinode

Assignment of a DCC channel to an MCN node in the NE. This parameter must be supplied when dcc\_stat = ENABLED and not the default osinode1 shall be used, in all other cases it shall be omitted.

An NE can have up to 8 instances of the OSI stack. Node-1 is default and has a NSAP. Nodes 2-8 have a NET and no SEL (NSAP = NET + SEL, for NET: SEL=00). Nodes 2-8 can be created and configured, see “ENT-ULSDCC-L3: Create a further OSI node” (12-60).

Type: AID.

Range: osinode{1-8}

Default: osinode1.

## Output format

If the ENT-FECOM is successful, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8) .

## Detailed behavior description

The ENT-FECOM command can assign a DCC channel to a specified node and enable or disable it. Furthermore the type of LAPD service can be set respectively modified for UITS (default) or AITS.

The update is reported by means of ED-FECOM notification.

It seems to be odd that an ENT command leads to an ED notification. The rationale behind that is as follows: ENT-FECOM has edit semantics, but it wasn't going to be changed into an ED command due to backward compatibility to CG. The notification behavior was, however, clean-up. Additional DLT-FECOM, ENT-FECOM notification are defined to notify the deletion/creation of DCC channels upon CP deletion/creation or MSP DCC slaving enabled/disabled.

A re-assignment from osinode to scnnode means: Set from ***dccstat***=ENABLE, ***osinode***=osinode{1, ..., 8} to ***dccstat***=DISABLE, ***scn\_dccstat***=ENABLE.

#### Example input/output

The following example shows the result of ENT-FECOM:

```
ENT-FECOM:NE-UNITE::123456::1-1-#-#-5-1,  
line:dccstat=enable,lapdmode=AITS,osinode=osinode5;  
LT-UNITE 00-12-24 12:00:00  
M 123456 COMPLD  
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-FECOM command.

##### Validation rule for enabled DCC channels

The command is rejected when any other parameter than ***dccstat*** is changed and ***dccstat*** is not set to ENABLED with the command.

Error code: SNVS - Status, Not in Valid State

##### Validation rule for parameter osinode

The command shall be rejected when ***dccstat*** is set to ENABLED and ***osinode*** is not in the created state. This means a value for parameter ***osinode*** other than osinode1 is used in the command, which was not used for creation of a node via ENT-ULSDCC-L3 before.

Error code: ENEQ - Equipage, Not Equipped osinode

##### Validation rule for max number of DCC channels for MS/RS-DCC reached

Nodes 2-8 can support only up to 16 DCC interfaces. So it should be checked that nodes 2-8 each have not more than 16 DCCs enabled.

Error code: SSRE - System Resources Exceeded, allowed limit of DCC channels exceeded

**Validation rule if more than 64 DCC channels are assigned to node-1**

Node-1 can support up to 64 DCC interfaces. So it should be checked that the max number of 64 DCC interfaces for node-1 (osinode1) is not exceeded.

Error code: SSRE - System Resources Exceeded, allowed limit of DCC channels exceeded

**Validation rule for DCC Protection**

A port cannot be specified when it is protecting part of a 1+1 MSP group and DCC protection switching is enabled.

Error Code: SNVS - Not in Valid State, part of 1+1 MSP protection

When DCC protection switching is enabled, the RS/MS DCC channel objects of the protection port are deleted and not available.

Disabling of RS-DCC/MS-DCC shall be rejected when RS-DCC/MS-DCC protection dcc is enabled.

Error Code: SNVS - Not in Valid State, DCC protection available

**Validation rule for 2 fiber BLSR/MS-SPRING**

DCC-disabling on a port of a 2-fiber BLSR/MS-SPRING protection group will be denied if no other DCC channel is available on that port.

Error code: SNVS - Not in Valid State, DCC needed for BLSR/MS-SPRING

**Validation rule for 4 fiber BLSR/MS-SPRING**

DCC-disabling on the port of the worker line of a 4-fiber BLSR/MS-SPRING protection group will be denied if no other DCC channel is available on that port.

Error code: SNVS - Not in Valid State, DCC needed for BLSR/MS-SPRING

**Validation rule for service condition**

Enable DCC termination is not possible if port is in out-of-service state.

**Error code:** SDNC - Status, Data Not Consistent, port is  
out-of-service

**Validation rule for transparent DCC cross-connection**

The DCC channel shall not be ENABLED or DISABLED if it is used  
in a transparent DCC cross-connection. *dccstat* and *scn\_dccstat* cannot  
be changed until the existing transparent DCC cross-connection is  
deleted.

**Error Code:** SNVS - Status, Not in Valid State, DCC channel  
used in transparent DCC cross connection

**Related TL1 messages**

- “RTRV-FECOM: Retrieve DCC related parameters” (12-13)
- “RTRV-CRS-FECOM: Retrieve transparent DCC  
cross-connection” (12-27)
- “ENT-CRS-FECOM: Enter transparent DCC cross-connection”  
(12-31)
- “DLT-CRS-FECOM: Delete transparent DCC cross-connection”  
(12-35)





## ED-FECOM notification

---

**Output format** The ED-FECOM notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

The ED-FECOM notification has the following specific syntax:

ED-FECOM:*port,dcctype:spec\_block*

### Output parameters

#### Command parameters

1. port  
See definition of *port* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).
2. dcctype  
See definition of *dcctype* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).

#### Spec block parameters

1. dccprottp  
See definition of *dccprottp* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).
2. dccstat  
See definition of *dccstat* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).  
Note: The default value of DISABLED is used when a DCC channel is created, this will be reported via the ENT-FECOM notification, or when a transparent DCC cross-connection is deleted, this will be reported via the ED-FECOM notification. The value TRANSPARENT is reported when a transparent DCC cross-connection is created. In this case all other spec\_block parameters does not have any effect on operation of the system if reported. The other spec\_block parameters does have only operational effect if the value is ENABLED.
3. lapdmode  
See definition of *lapdmode* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).

4. lapdrl  
See definition of *lapdrl* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).
5. osinode  
See definition of *osinode* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).

**Example output**

```
NE-UNITE 00-11-03 01:00:00
A 000 REPT DBCHG
"TIME=01-00-00,DATE=00-12-13:ED-FECOM::1-1-#-#-5-3,
line:dccprottp=0X1"
;
```



## ENT-FECOM notification

---

**Output format** The ENT-FECOM notification shall use the general format of a REPT DBCHG (Report Database Change) notification. Note: In contrast to RTRV-FECOM this notification will also be sent when dccstat=DISABLE, which is the default value after creation of a DCC channel.

The ENT-FECOM notification has the following specific syntax:

ENT-FECOM: *port*, *dcctype*: *spec\_block*

### Output parameters

#### Command parameters

1. *port*  
See definition of *port* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).
2. *dcctype*  
See definition of *dcctype* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).

#### Spec block parameters

1. *dccprottp*  
See definition of *dccprottp* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).
2. *dccstat*  
See definition of *dccstat* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).
3. *lapdmode*  
See definition of *lapdmode* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).
4. *lapdrl*  
See definition of *lapdrl* in “RTRV-FECOM: Retrieve DCC related parameters” (12-13).
5. *osinode*  
See definition of *osinode* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).

**Example output**

```
NE-UNITE 00-11-03 01:00:00
A 000 REPT DBCHG
"TIME=01-00-00,DATE=00-12-13:ENT-FECOM::1-1-#-#-5-2,
line:dccprottp=0X1,dccstat=DISABLE,lapdmode=UITS,
osinode=osinode1"
;
```



## DLT-FECOM notification

---

**Output format** The DLT-FECOM notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

The DLT-FECOM notification has the following specific syntax:

DLT-FECOM:*port,dcctype:spec\_block*

### Output parameters

#### Command parameters

1. *port*  
See definition of *port* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).
2. *dcctype*  
See definition of *dcctype* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).

#### Spec block parameters

1. *osinode*  
See definition of *osinode* in “ENT-FECOM: Enter DCC channel related parameters” (12-16).

### Example output

```
NE-UNITE 01-01-08 01:10:11
A 000 REPT DBCHG
"TIME=01-01-09,DATE=00-00-13:DLT-FECOM::1-1-#-#-5-
1,LINE:osinode1"
;
```



# Transparent DCC cross-connection

## Overview

---

**Purpose** Transparent DCC cross-connections allows to cross-connect DCC channels (either DCC-R or DCC-M) of an OPn/EPn on the XC320 or XC640 without adding/dropping them to/from the OHI bus to/from the CTL/DCF. As such there is no processing on the DCF for those channels a transparent DCC cross-connection allows to transparently pass-through certain DCC channel without any processing by the system. The transparent DCC cross-connections are complete independent from the transmission cross C-connection. The transparent DCC cross-connections are always bidirectional. The system supports up to 25 bidirectional transparent DCC cross-connections.

### Contents

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| ENT-CRS-FECOM: Enter transparent DCC cross-connection     | <a href="#">12-31</a> |
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| DLT-CRS-FECOM: Delete transparent DCC cross-connection    | <a href="#">12-35</a> |
| DLT-CRS-FECOM notification                                | <a href="#">12-38</a> |



## RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection

---

The RTRV-CRS-FECOM can be initiated by the users to retrieve the established transparent DCC cross-connections.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-CRS-FECOM:*tid*:[*port\_aid*][,*dcctype*]:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. *port\_aid* – DCC port  
This parameter indicates the port AID of a circuit pack which is used together with *dcctype* to identify the DCC channel which is involved in a transparent DCC cross-connection. If this field is omitted, the report will include the DCC parameters of all ports belonging to the NE and being provisioned with transparent DCC.  
Type: AID  
Range: SPortAID, the keyword “all” shall be allowed on slot and port level.
4. *dcctype*  
This parameter specifies whether the LINE/MS or SECTION/RS transparent DCC cross-connection parameters of the OPn port shall be reported by the command. If this parameter is omitted, LINE and SECTION DCC parameters will be considered for the output.  
Type: alphanumeric value set  
Range: LINE, SECTION.

**Output format** In response to a valid RTRV-CRS-FECOM command, the following output is returned:

```
sid date time
M ctag COMPLD
  "port_aid1,port_aid2,dcctype"
  .....
  "port_aid1,port_aid2,dcctype"
;
```

The output will not be sorted.

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Important!** The NE responses partially with duplicate lines, if the user retrieves transparent DCC connections by specifying an AID range. The NE lists every port with transparent DCC connections in this AID range. Thus, if both connected DCC ports are in the range, the connection is listed two times. The duplicate lines should be ignored.



## Output parameters

### Command parameters

1. port\_aid1 – DCC port 1  
This parameter indicates one (first) optical port AID of an OPn circuit pack which is used together with dcctype to identify the DCC channel which is involved in a transparent DCC cross-connection.  
Type: AID  
Range: SPortAID. The keyword "all" shall be allowed not.
2. port\_aid2 – DCC port 2  
This parameter indicates one (second) optical port AID of an OPn circuit pack which is used together with dcctype to identify the DCC channel which is involved in a transparent DCC cross-connection.  
Type: AID.  
Range: SPortAID. The keyword "all" shall be allowed not.
3. dcctype  
This parameter specifies whether the LINE/MS or SECTION/RS transparent DCC cross-connection parameters of the OPn port is reported by the command.  
Type: alphanumeric value set.  
Range: LINE, SECTION.

### Detailed behavior description

The System supports only bidirectional transparent DCC cross-connections. Each reported transparent DCC cross-connection is bidirectional.

The command reports all transparent DCC cross-connections. That means only DCC channels are shown with *dccstat* = TRANSPARENT.

Each transparent DCC cross-connection will reported only once also if it will be addressed in case of AID range twice (range will go over both involved ports).

### Update affected entities

The RTRV-CRS-FECOM command does not generate a REPT DBCHG message.

**Example input/output**    The following example shows a RTRV-CRS-FECOM command where two transparent DCC cross-connections are reported one for *dcctype* = SECTION and one for *dcctype* = LINE:

```
RTRV-CRS-FECOM: LUCENT-UNITE-NE:1-1-#-#-2-1:12345;  
NE-UNITE 00-12-24 11:00:00  
M 123456 COMPLD  
"1-1-#-#-1-1,1-1-#-#-2-1,LINE"  
"1-1-#-#-1-1,1-1-#-#-2-1,SECTION"  
;
```

**Error responses**    Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-CRS-FECOM command.

#### Related TL1 messages

- “ENT-CRS-FECOM: Enter transparent DCC cross-connection” (12-31)
- “DLT-CRS-FECOM: Delete transparent DCC cross-connection” (12-35)
- “RTRV-FECOM: Retrieve DCC related parameters” (12-13)
- “ENT-FECOM: Enter DCC channel related parameters” (12-16)



## ENT-CRS-FECOM: Enter transparent DCC cross-connection

---

The ENT-CRS-FECOM can be initiated by the users to establish a transparent DCC cross-connection.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 3  
Abortable: No.

**Input format** Command Syntax: ENT-CRS-FECOM:*tid:port\_aid1,port\_aid2,dcctype:ctag*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. port\_aid1 – DCC port 1  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for input parameter syntax and description of this parameter.
4. port\_aid2 – DCC port 2  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for input parameter syntax and description of this parameter.
5. dcctype  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for input parameter syntax and description of this parameter.

**Output format** In response to a valid ENT-CRS-FECOM command, the following output shall be returned:

sid date time

```
M  ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

#### Detailed behavior description

The ENT-CRS-FECOM command establishes a transparent DCC cross-connection. The transparent DCC cross-connection will be established between *port\_aid1* and *port\_aid2* for the specified *dcctype*. The System supports only bidirectional transparent DCC cross-connections.

#### Update affected entities

The established bidirectional transparent DCC cross-connection will be reported via ENT-CRS-FECOM notification reporting the established transparent DCC cross-connection.

The update of the *dccstat* parameter of the two involved DCC channels will be reported via ED-FECOM notification for each port reporting the changed *dccstat* = TRANSPARENT.

#### Example input/output

The following example shows ENT-CRS-FECOM commands where two transparent DCC cross-connections are established one for *dcctype* = SECTION and one for *dcctype* = LINE:

```
ENT-CRS-FECOM:NE-UNITE:1-1-#-#-1-1,1-1-#-#-2-1,LINE:12345;
    NE-UNITE 00-12-24 12:00:00
M  123456 COMPLD
;
ENT-CRS-FECOM:NE-UNITE:1-1-#-#-1-1,1-1-#-#-2-1,SECTION:12345;
    NE-UNITE 00-12-24 12:00:00
M  123456 COMPLD
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-CRS-FECOM command.

#### Validation rule: Different Port AIDs

The AIDs of *port\_aid1* and *port\_aid2* must specify different ports.

Error Code: IDNC - Input, Data Not Consistent, port\_aid1  
and port\_aid2 not different

**Validation Rule: Maximum of DCC CCs exceeded**

The maximum number of 25 bidirectional transparent DCC  
cross-connections is exceeded.

Error Code: SSRE - Status, System Resources Exceeded, limit  
of transparent DCC Cross Connectins exceeded

**Validation Rule: DCC channels enabled**

One of the DCC channels is already enabled for DCC overhead  
processing.

Error Code: SNVS - Status, Not in Valid State, DCC channel  
already enabled

**Validation Rule: DCC protection**

One of the DCC channels is occupied the MSP/APS protection of  
DCC channels.

Error Code: SNVS - Status, Not in Valid State, DCC channel  
occupied by MSP/APS DCC protection

**Related TL1 messages**

- “RTRV-CRS-FECOM: Retrieve transparent DCC  
cross-connection” (12-27)
- “DLT-CRS-FECOM: Delete transparent DCC cross-connection”  
(12-35)
- “RTRV-FECOM: Retrieve DCC related parameters” (12-13)
- “ENT-FECOM: Enter DCC channel related parameters” (12-16)



## ENT-CRS-FECOM notification

---

**General** The ENT-CRS-FECOM notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Command syntax: ENT-CRS-FECOM:*port\_aid1,port\_aid2,dcctype*

### Output parameters

#### Command parameters

1. port\_aid1 – DCC port 1  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for notification parameter syntax and description of this parameter.
2. port\_aid2 – DCC port 2  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for notification parameter syntax and description of this parameter.
3. dcctype  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for notification parameter syntax and description of this parameter.

**Example output** The following example shows ENT-CRS-FECOM notifications reporting established transparent DCC cross-connections:

```

UNITE-NE 00-12-24 12:00:00
A 000 REPT DBCHG
"TIME=12:00:00,DATE=00-12-24:ENT-CRS-FECOM:1-1-#-#-1-
1,1-1-#-2-1,LINE"
;
UNITE-NE 00-12-24 12:00:00
A 000 REPT DBCHG
"TIME=12:00:00,DATE=00-12-24:ENT-CRS-FECOM:1-1-#-#-1-
1,1-1-#-2-1,SECTION"
;

```



## DLT-CRS-FECOM: Delete transparent DCC cross-connection

---

The DLT-CRS-FECOM can be initiated by the users to delete a transparent DCC cross-connection.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): M3  
Priority: 3  
Abortable: No.

**Input format** Command Syntax: DLT-CRS-FECOM:*tid:port\_aid1,port\_aid2,dcctype:ctag;*

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. port\_aid1 – DCC port 1  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for input parameter syntax and description of this parameter.
4. port\_aid2 – DCC port 2  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for input parameter syntax and description of this parameter.
5. dcctype  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for input parameter syntax and description of this parameter.

**Output format** In response to a valid DLT-CRS-FECOM command, the following output shall be returned:

```
sid date time
M ctag COMPLD
```

;

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Detailed behavior  
description**

The DLT-CRS-FECOM command deletes a transparent DCC cross-connection specified by *port\_aid1*, *port\_aid2* and *dcctype*.

The system supports only bidirectional transparent DCC cross-connections.

**Update affected entities**

The deletion of the transparent DCC cross-connection will be reported via DLT-CRS-FECOM notification reporting the deleted transparent DCC cross-connection.

**Example input/output**

The following example shows DLT-CRS-FECOM commands there two transparent DCC cross-connections are deleted one for *dcctype* = SECTION and one for *dcctype* = LINE:

```
DLT-CRS-FECOM:NE-UNITE:1-1-#-#-1-1,1-1-#-#-2-1,LINE:12345;  
    NE-UNITE 00-12-24 12:00:00  
M 123456 COMPLD  
;  
DLT-CRS-FECOM:NE-UNITE:1-1-#-#-1-1,1-1-#-#-2-  
1,SECTION:12345;  
    NE-UNITE 00-12-24 12:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the RTRV-HDR command ERROR RESPONSES section. The error responses listed there apply to the DLT-CRS-FECOM command.

**Validation Rule: Entity (transparent DCC cross-connection) must exist**

The specified transparent DCC cross-connection must exist on both specified ports.

**Error Code:** IENE - Input Entity Not Exists, Specified Transparent DCC Cross Connection does not exist



Transparent DCC cross-connection  
DLT-CRS-FECOM: Delete transparent DCC  
cross-connection

*TL1 messages - data communications network*

**Related TL1 messages**

- “ENT-CRS-FECOM: Enter transparent DCC cross-connection” (12-31)
- “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27)
- “RTRV-FECOM: Retrieve DCC related parameters” (12-13)
- “ENT-FECOM: Enter DCC channel related parameters” (12-16)



## DLT-CRS-FECOM notification

---

**Output format** The DLT-CRS-FECOM notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

Command syntax: DLT-CRS-FECOM:*port\_aid1,port\_aid2,dcctype*

### Output parameters

#### Command parameters

1. port\_aid1 – DCC port 1  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for notification parameter syntax and description of this parameter.
2. port\_aid2 – DCC port 2  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for notification parameter syntax and description of this parameter.
3. dcctype  
Refer to the “RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection” (12-27) command for notification parameter syntax and description of this parameter.

**Example output** The following example shows DLT-CRS-FECOM notifications reporting the deletion of transparent DCC cross-connections:

```

UNITE-NE 00-12-24 12:00:00
A 000 REPT DBCHG
"TIME=12:00:00,DATE=00-12-24:DLT-CRS-FECOM::
1-1-#-#-1-1,1-1-#-2-1,LINE"
;
UNITE-NE 00-12-24 12:00:00
A 000 REPT DBCHG
"TIME=12:00:00,DATE=00-12-24:DLT-CRS-FECOM::
1-1-#-#-1-1,1-1-#-2-1,SECTION"
;

```



# LAN

## Overview

---

**Purpose** This section describes TL1 commands applicable to the LAN for *WaveStar*® CIT respectively *Navis*® Optical EMS access.

### Contents

|                                                         |                       |
|---------------------------------------------------------|-----------------------|
| RTRV-FECOM-LAN: Retrieve LAN channel related parameters | <a href="#">12-40</a> |
| ENT-FECOM-LAN: Enter LAN related parameters             | <a href="#">12-44</a> |
| ENT-FECOM-LAN notification                              | <a href="#">12-50</a> |
| Autonomous notification                                 | <a href="#">12-52</a> |



## RTRV-FECOM-LAN: Retrieve LAN channel related parameters

---

The RTRV-FECOM-LAN command can be initiated by users to retrieve the provisioned state of the LAN ports (LAN1, LAN2 and LAN3).

**Properties**      Priority: S1  
Abortable: Yes

**Input format**      Command Syntax: RTRV-FECOM-LAN:*tid*[:*aid*]:*ctag*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
See definition of “RTRV-HDR: Retrieve header” (5-8).
2. *aid* – Access Identifier  
This parameter indicates the LAN port AID.  
Type: AID.  
Range: LanPort AID.  
Default: If this field is omitted, the report will display the status of all lan ports belonging to the *tid*.
3. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.

**Output format**      If the RTRV-FECOM-LAN is successful, the following normal completion response is returned:

```

      sid date time
M  ctag COMPLD
    "aid:spec_block"
      ...
    "aid:spec_block"
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section for the “RTRV-HDR: Retrieve header” (5-8) command.

RTRV-FECOM-LAN: Retrieve LAN channel  
related parameters

### Output parameters

#### Command parameters

1. aid – Target Identifier  
This parameter indicates the LAN port AID. The value *lanall* is not allowed.  
Type: AID.  
Range: LanPort AID.

#### Spec block parameters

1. ip\_ad - IP Address  
This parameter indicates the assigned IP address for the LAN interface. The IP-address includes both, a router address and a HOST address. The HOST address that will be used for FTP depends on the LAN interface where the related TCP connection request originates.  
The CIT is expected to use the HOST address of LAN1. The Navis<sup>®</sup> Optical EMS is expected to use the HOST address of LAN2 (or LAN3 in later releases).  
Type: 32-bit IPv4 address: Four dot separated numeric strings OR empty string The empty string value is used as indication for an invalid/undefined IP address.  
Range: For first numeric string: 0 .. 223; for second to fourth numeric string: 0 .. 255  
Default: For LAN1, LAN2 and LAN3: empty string.
2. ip\_lanstat - IP-LAN Status  
This parameter indicates whether IP communication over the external LAN channel is enabled or disabled. Note: Enabling has no effect if *lanstat* is disabled for that interface.  
Type: Alphanumeric value set  
Range: ENABLE or DISABLE for LAN1, LAN2, LAN3  
Default: DISABLE for LAN1, LAN2, LAN3.
3. ip\_snm - IP Subnet Mask  
This parameter indicates the assigned IP subnet mask (32-bit IPv4) for the LAN interface. The full IP-address is needed as host-address. Each LAN needs its own IP-address and IP-mask, indicating that all IP-addresses that match the prefix (Unmasked part) are grouped as the subnet-ID for this LAN-subnet.

RTRV-FECOM-LAN: Retrieve LAN channel  
related parameters

Type: 32-bit IPv4 address: Four dot separated numeric strings or empty string. The empty string value is used as indication for an invalid/undefined IP subnet mask.

Range: For each numeric string: 0 .. 255.

Default: For LAN1, LAN2 and LAN3: empty string.

4. isis\_stat – (I) IS-IS Status

This parameter indicates whether (integrated) IS-IS is enabled or disabled on the LAN port specified by the input *aid*.

Note: Enabling has no effect if lanstat is disabled for that interface.

Type: Alphanumeric value set.

Range: ENABLE (default), DISABLE.

5. lanrpri – LAN Designated Router Priority

This parameter sets the relative priority for the node in the election for designated router on this LAN. There is a separate election for each separate LAN to which the node is connected.

A higher value indicates a higher probability to be selected as designated router. A designated router is selected per area (between the nodes on that LAN with the same area address) and for the Level-2 nodes on the LAN.

Type: numeric string.

Range: 1 – 127.

Default: 64.

6. lanstat – LAN Status

This parameter indicates whether physical communication over the external channel is enabled or disabled.

Note: Disabling of an interface also affects usage of protocols over this interface, see *lan\_stat* and *osi\_stat*.

Type: Alphanumeric value set.

Range: ENABLE for lan1; ENABLE, DISABLE for lan2, lan3:

Default: ENABLE for lan1, lan2, lan3.

7. lantlss – LAN TARP Storm Suppression

This parameter indicates the enhanced TARP propagation rules that suppress TARP LAN storms.

Type: Alphanumeric value set.

Range:

- ENABLE (default)
- DISABLE.

RTRV-FECOM-LAN: Retrieve LAN channel  
related parameters

8. osinode  
Assignment of LAN port to an OSI-node in the NE. A UNITE NE can have up to 8 instances of the OSI stack. Node-1 is the default and has a NSAP. Nodes 2-8 have a NET and no SEL (NSAP = NET + SEL, for NET: SEL=00). Node 1 is always present. Node 2-8 can be created and configured, see command ENT-ULSDCC-L3.  
Type: AID.  
Range: For LAN1: osinode1 (fixed value).  
For LAN2 and LAN3: osinode{1-8}.  
Note: If this parameter is set to scnnode lanstat and ip\_lanstat must be ENABLED.  
Default: osinode1.
9. osi\_lanstat - OSI LAN Status  
This parameter indicates whether OSI communication over the external channel is enabled or disabled.  
Type: Alphanumeric value set.  
Range: ENABLE for LAN1, LAN2, LAN3  
Default: ENABLE for LAN1, LAN2, LAN3.

#### Detailed behavior description

The command retrieves system parameter as described in the Output parameter section.

#### Example input/output

The following example shows the result of RTRV-FECOM-LAN:

```
RTRV-FECOM-LAN:NE-UNITE:1-1-lan1:123456;
NE-UNITE 00-12-24 11:01:00
M 123456 COMPLD
"1-1-lan1:ip_lanstat=ENABLE,ip_ad=135.248.206.72,
ip_snm=255.255.0.0,lanstat=ENABLE,lanrpri=64,
lantlss=ENABLE,osinode=osinode1,osi_lanstat=ENABLE"
;
```

#### Error responses

Refer to the "RTRV-HDR: Retrieve header" (5-8) command Error responses section. The error responses listed there apply to the RTRV-FECOM-LAN command.

#### Related TL1 messages

- "ENT-FECOM-LAN: Enter LAN related parameters" (12-44)



## ENT-FECOM-LAN: Enter LAN related parameters

---

The ENT-FECOM-LAN command allows manually enable or disable IP or OSI on this LAN and set related parameters. It can also be used to modify parameters when IP or OSI is enabled.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: No.

**Input format**      Command Syntax: ENT-FECOM\_LAN:*tid:aid:ctag:::[spec\_block]*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2.    *aid* – Access Identifier  
This parameter indicates the LAN port AID.  
Type: AID.  
Range: LanPort AID with one exception: the keyword *lanall* is not allowed.
3.    *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.

#### Spec block parameters

If a LAN interface is being changed, all parameters not set explicitly in the command line will remain the actual values, except the parameter *osinode*, which shall be changed to the default value if the parameter is omitted.

1.    *ip\_ad* – IP Address  
This parameter indicates the assigned IP address for the LAN interface.  
The IP-address includes both, a router address and a HOST address. The HOST address that will be used for FTP depends on the LAN interface where the related TCP connection request originates.



## ENT-FECOM-LAN: Enter LAN related parameters

Note: Setting of *ip\_ad* comes only into effect when *ip\_lanstat* is ENABLE and must be consistent with *ip\_snm* (see also validation rules).

Type: 32-bit IPv4 address: Four dot separated numeric strings.

Range: For first numeric string: 0 .. 223 For second to fourth numeric string: 0 .. 255.

2. *ip\_lanstat* – IP-LAN Status  
See definition of *ip\_lanstat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
3. *ip\_snm* – IP Mask  
See definition of *ip\_snm* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).  
Note: Setting of *ip\_snm* comes only into effect when *ip\_lanstat* is ENABLE and must be consistent with *ip\_ad* (see also validation rules).
4. *isis\_stat* – (I) IS-IS Status  
See definition of *isis\_stat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
5. *lanrpri* – LAN Designated Router Priority  
See definition of *lanrpri* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
6. *lanstat* – LAN Status  
See definition of *lanstat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
7. *lantlss* – LAN TARP Storm Suppression  
See definition of *lantlss* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
8. *osinode*  
See definition of *osinode* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).  
The parameter *osinode* is mandatory. This means, that the parameter will be changed to the default value if it is not specified.
9. *osi\_lanstat* – OSI LAN Status  
See definition of *osi\_lanstat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).

ENT-FECOM-LAN: Enter LAN related parameters

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output format</b>                 | <p>If the ENT-FECOM-LAN is successful, the following normal completion response is returned:</p> <pre> sid date time M ctag COMPLD ;</pre> <p>The output parameters <i>sid</i>, <i>date</i>, <i>time</i>, and <i>ctag</i> included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .</p>                                                                                                                                                                                                                                                                                                   |
| <b>Detailed behavior description</b> | <p>The command set the condition of a LAN interface respectively or modify concerning parameters. Result should be an update of the parameters for the specified LAN interface as set in the spec_block of the command line.</p> <p>The update is reported by means of ENT-FECOM-LAN notification.</p> <p>Modification of the parameters <i>ip_ad</i>, <i>ip_snm</i>, <i>lantlss</i> leads to a reset of the DCF controller.</p> <p>Setting lanstat to disabled shall implicitly set the following parameters to disabled:</p> <ul style="list-style-type: none"> <li>• <i>osi_lanstat</i></li> <li>• <i>ip_lanstat</i></li> <li>• <i>isis_stat</i>.</li> </ul> |
| <b>Example input/output</b>          | <p>The following example shows the result of ENT-FECOM-LAN:</p> <pre> ENT-FECOM-LAN:NE-UNITE:1-1-1an2:123456::: ip_lanstat=enable,ip_ad=135.248.206.64, ip_snm=255.255.0.0,lanstat=enable,osinode=osinode8; NE-UNITE 00-12-23 11:59:00 M 123456 COMPLD ;</pre>                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Error responses</b>               | <p>Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-FECOM-LAN command.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

ENT-FECOM-LAN: Enter LAN related parameters

**Validation rule for parameter osinode**

The command shall be rejected when a OSI node is not in a created state. This means a value for parameter *osinode* is used in the command, which is different from osinode1 and was not used for creation of a node via ENT-ULSDCC-L3 before.

Error code: ENEQ - Equipage, Not Equiped osinode

**Validation rule: Can't disable LAN1**

If it is tried to set *lanstat*, or *osi\_lanstat* to DISABLE for LAN1, the command will be rejected.

Error code: SNVS - Status, Not in Valid State, LAN1 can not be disabled

**Validation rule: Can't enable *lanstat* when *ip\_lanstat* and *osi\_lanstat* are DISABLED**

If it is tried to set *lanstat*=ENABLE for a specific LAN, while both *osi\_lanstat* and *ip\_lanstat* are set to DISABLE for the same LAN, the command will be rejected.

Error code: IDNC - Input, Data, Not Consistent

**Validation rule: Can't enable *ip\_lanstat* and/or *osi\_lanstat* when *lanstat* is disabled**

If it is tried to set *osi\_lanstat*=ENABLE and/or *ip\_lanstat*=ENABLE without setting *lanstat*=ENABLE and *lanstat* is currently disabled, then the command will be rejected.

Error Code: IDNC - Input, Data, Not Consistent

**Validation rule: Check IP configuration**

If it is tried to set *ip\_lanstat* to ENABLE for a LAN (LAN1, LAN2, LAN3) without a valid IP address *ip\_ad* and subnetwork mask *ip\_snm*, the command shall be denied. Valid means:

- any 32 bit IPv4 address in the range of 0.0.0.0 to 255.255.255.255.

Error code: SNVS - Status, Not in Valid State, invalid IP configuration

ENT-FECOM-LAN: Enter LAN related parameters

The validation rule does not cover the configuration rules for IP networks. These rules may be different for each network. In many networks the following rules are applicable:

- `ip_ad` must not be a multicast group address or reserved special case address, i.e. in the range of 0.0.0.0 to 223.255.255.255.
- `ip_snm` shall be in a format of one or more '1' bits, followed by zero or more '0' bits (i.e. all '1' are near the most significant bit, all '0' are near the least significant bit).

Additionally the following constraints between `ip_ad` and `ip_snm` must be true:

- $(ip\_ad \text{ AND } ip\_snm)$  shall not be equal to 0. This means that the Subnet ID shall not be 0.
- $((ip\_ad \text{ AND } ip\_snm) \text{ OR NOT } ip\_snm)$  shall not be equal to 255.255.255.255. This means that the Subnet ID shall not consist of all 1s.
- $(ip\_ad \text{ AND NOT } ip\_snm)$  shall not be equal to 0. This means that the Host ID shall not be 0.
- $((ip\_ad \text{ AND NOT } ip\_snm) \text{ OR IP\_mask})$  shall not be equal to 255.255.255.255. This means that the Host ID shall not consist of all 1s.
- $(ip\_ad \text{ AND } 255.0.0.0)$  shall not be equal to 127.0.0.0. This means that the IP address shall not be the (reserved) loopback address.

The AND, OR, NOT operations above are meant as bitwise logical operations on all 32 bits of *ip\_ad*, *ip\_snm*.

**Validation rule: only *osinode1* supports IP**

If it is tried to set *ip\_lanstat* to ENABLE while the LAN port is assigned to OSI node 2...8, the command shall be rejected.

Error code: SNVS - Status, Not in Valid State, Assigned Node not allowed for IP

**Validation rule: Assignmet of OsiNode without IP support**

If it is tried to (re-)assign a LAN port to OsiNode2 til OsiNode8, then *ip\_lanstat* must be set to disabled.

Error Code: SNVS - Status, Not in Valid State, Assigned Node not allowed for IP

ENT-FECOM-LAN: Enter LAN related parameters

**Validation rule: only osinode1 for LAN 1**

If it is tried to assign another osinode as osinode1 for LAN1, the command shall be rejected.

Error code: IDNV - Input Data not Valid, osinode cannot be changed for LAN1

**Validation rule: check of the maintenance condition**

The system must be in maintenance condition (MCOND=YES) for change of:

- ip\_ad
- ip\_snm.

The system must be in normal operation state (MCOND=NO) for change of:

- isis\_stat
- osi\_lanstat
- lanstat
- lantlss
- lanrpri.

Note: ip\_ *lanstat* and osinode is independent of the maintenance condition.

Error Code: SNVS - Status, Not in Valid State

**Validation rule: IP disabling while T-TD or FTDD is enabled**

If it is tried to set *ip\_lanstat* to DISABLE on all LAN ports while either *tl1tcpipgw* or *ftamftp gw* is set to ENABLE, the command shall be rejected.

Error Code: SNVS - Status, Not in Valid State, cannot disable IP on all LAN ports while T-TD or FTDD is enabled

**Validation rule: Can't assign same IP address to several LANs**

Setting the IP address of a LAN shall be rejected if this IP address is already assigned to another LAN of the NE.

Error Code: IDNC - Input, Data, Not Consistent

**Related TL1 messages**

- “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40)



## ENT-FECOM-LAN notification

---

**Output format** The ENT-FECOM-LAN notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: The ENT-FECOM-LAN notification has the following specific syntax:

ENT-FECOM-LAN:*aid*::*spec\_block*

### Output parameters

#### Command parameters

1. *aid* – Access Identifier  
See definition of *aid* in “ENT-FECOM-LAN: Enter LAN related parameters” (12-44).

#### Spec block parameters

1. *ip\_ad* – IP Address  
See definition of *ip\_ad* in “ENT-FECOM-LAN: Enter LAN related parameters” (12-44).
2. *ip\_lanstat* – IP-LAN Status  
See definition of *ip\_lanstat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
3. *ip\_snm* – IP Mask  
See definition of *ip\_snm* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
4. *isis\_stat* – (I) IS-IS Status  
See definition of *isis\_stat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
5. *lanrpri* – LAN Router Priority  
See definition of *lanrpri* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
6. *lanstat* – LAN Status  
See definition of *lanstat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).

7. osinode  
See definition of *osinode* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).
8. osi\_lanstat – OSI LAN Status  
See definition of *osi\_lanstat* in “RTRV-FECOM-LAN: Retrieve LAN channel related parameters” (12-40).

**Example output**

```
NE-UNITE 00-11-03 01:59:00
A 000 REPT DBCHG
"TIME=02-00-59,DATE=00-12-23:ENT-FECOM-LAN:1-1-lan2
::ip_lanstat=ENABLE,ip_ad=135.248.206.64,
ip_snm=255.255.0.0,lanstat=ENABLE,lanrpri=64,
lantlss=ENABLE,osinode=osinode5"
;
```



## Autonomous notification

---

**Start-up with default  
database**

The event "Start-up with default DB" causes that the three LAN instances with AIDs lan1, lan2, lan3 are created. No notifications shall be sent.





# OSI network layer

## Overview

---

**Purpose** This section describes TL1 commands applicable to layer 3 of the OSI stack.

### Contents

|                                                                  |                       |
|------------------------------------------------------------------|-----------------------|
| RTRV-ULSDCC-L3: Retrieve layer 3 related parameters              | <a href="#">12-54</a> |
| ENT-ULSDCC-L3: Create a further OSI node                         | <a href="#">12-60</a> |
| ENT-ULSDCC-L3 Notification                                       | <a href="#">12-65</a> |
| ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack. | <a href="#">12-67</a> |
| ED-ULSDCC-L3 notification                                        | <a href="#">12-72</a> |
| DLT-ULSDCC-L3: Delete a node ID other than node-1                | <a href="#">12-74</a> |
| DLT-ULSDCC-L3 Notification                                       | <a href="#">12-77</a> |
| Autonomous notification                                          | <a href="#">12-78</a> |



## RTRV-ULSDCC-L3: Retrieve layer 3 related parameters

---

The RTRV-ULSDCC-L3 command is used to retrieve the layer 3 parameters of the OSI nodes. Up to 8 independent OSI nodes can exist in an NE: Node-1 has an NSAP and is created by default. Node 2-8 have each a Network Entity Title (NET). NSAP = NET + SEL . Node 2-8 can be created and deleted, see commands ENT-ULSDCC-L3, DLT-ULSDCC-L3. For OSI nodes the parameters of the NSAP field, IS level, IS domain, RA prefix and RA destination node are retrieved.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-ULSDCC-L3:*tid::ctag[:osinode]*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. osinode  
A *LambdaUnite*® MSS NE can have up to 8 instances of the OSI stack. Node-1 is default. Node 2-8 can be created and configured, see command ENT-ULSDCC-L3.  
Type AID.  
Range: OSI\_node\_AID.  
Default: If this field is omitted then the command shall provide output for all nodes which are created.

**Output format** If the RTRV-ULSDCC-L3 is successful, the following normal completion response is returned:  
sid date time

## RTRV-ULSDCC-L3: Retrieve layer 3 related parameters

```
M  ctag COMPLD
    "osinode:spec_block"
    ...
    "osinode:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

### Output parameters

#### Command parameters

1. osinode  
See definition of input parameter *osinode* in RTRV-ULSDCC-L3  
The value *osinodeall* is not allowed as output parameter.

#### Spec block parameters

1. l3afi – NSAP/NET Authority and Format Identifier  
This parameter sets or retrieves the format for the rest of the address.  
Type: hexadecimal number.  
Range: 10 – 99  
Default: 39. This value identifies the iso\_dcc format.
2. l3idi – NSAP/NET initial Domain Identifier  
This parameter consists of two values:
  - a 3 semi-octet (3-digit hexadecimal) IDI part to specify the country code indicating the registration authority responsible for the allocation and assignment of the NSAP address.
  - a 1 semi-octet (1-digit hexadecimal) IDI pad part. The parameter is used for set and retrieve values.
 Type: hexadecimal number.  
Range: 0000 – FFFF  
Default:  
SONET: IDI = 840; IDI pad = F  
SDH: IDI = 000; IDI pad = 0.

## RTRV-ULSDCC-L3: Retrieve layer 3 related parameters

3. l3dfi – NSAP/NET DSP Format Identifier  
This parameter (2-digit hex) NSAP is used to set or retrieve the format for the rest of the address.  
Type: hexadecimal number.  
Range: 00 – FF.  
Default: 80. This value represents the SONET DSP format.
4. l3org – NSAP/NET Organization Identifier  
This parameter of NSAP is used to set or retrieve the NSP (allocated Company Code).  
Type: hexadecimal number.  
Range: 000000 – FFFFFFFF.  
Default: 000000.
5. l3res – NSAP/NET Reserved  
This NSAP part currently has not been assigned a specific purpose.  
Type: hexadecimal number.  
Range: 0000 – FFFF.  
Default: 0000.
6. l3rd – NSAP/NET Routing Domain  
This parameter of NSAP is used to set or retrieve a unique routing domain within an administrative domain. A standard for use has not been defined until now.  
Type: hexadecimal number.  
Range: 0000 – FFFF.  
Default: 0000.
7. l3area – NSAP/NET Area Identifier  
This parameter of NSAP is used to set or retrieve the area. So NEs can be identified in the same area.  
Type: hexadecimal number.  
Range: 0000 – FFFF.  
Default: 0000.
8. l3sys – NSAP/NET System Identifier  
This system parameter of the NSAP is set by the Equipment Manufacturer. The value is fix and globally unique among all NEs. For values of NSAP/NET system parameter see chapter Default below.  
Type: hexadecimal number.  
Range: 000000000000 – FFFFFFFFFFFFFFFF

## RTRV-ULSDCC-L3: Retrieve layer 3 related parameters

Default:

- Node-1: IEEE-MAC address of LAN1
- Node-2: IEEE-MAC address of LAN1 +1
- Node-3: IEEE-MAC address of LAN1 +2
- Node-4: IEEE-MAC address of LAN1 +3
- Node-5: IEEE-MAC address of LAN1 +4
- Node-6: IEEE-MAC address of LAN1 +5
- Node-7: IEEE-MAC address of LAN1 +6
- Node-8: IEEE-MAC address of LAN1 +7

9. l3sel – NSAP Selector

This parameter serves to differentiate multiple access points (NSAPs) for the same NE (node-1). The values cannot be set manually. The NET addresses of node 2-8 have **l3sel**=00.

Type: hexadecimal number.

Range: 00 – FF. Values:

- 1D: For TP4 PDUs, when TP4 runs over CLNP, Also used for SDH supporting NEs
- 00: For NET, used for exchanging PDUs in the ES-IS and IS-IS routing exchange protocols
- 04: For NSAP of CLNP PDUs, encapsulated IP packets
- AF: For TARP PDUs, when TARP is run over CLNP.

Default: 1D, see NET addresses of node 2-8 are reported as NSAP with **l3sel**=00.

10. l3isisnl – Layer 3 IS Level

This parameter indicates the network router type: ES-IS (level1, value L1), IS-IS (level2, value L2) and partition repair capability (value3).

Type: alphanumeric string.

Range:

- L1: this means level1, IS-IS, only allowed when parameter l3radesnode=0
- L12: this means level2, IS-IS which contains also level1, ES-IS
- L12PRC : this means partition repair capable (PRC) and contains also level1 and level2.

Default: L1.

11. l3domain – Layer3 IS Domain

Per node in a NE, a domain group must be specified. This will be done with this parameter which can be set and retrieved. All nodes in the NE with the same domain-number are interconnected and can communicate without the need for inter-domain routing via RA-PREFIX.

Type: alphanumeric string.

Range:

- 1 for osinode1
- 1 – 2 for osinode2 to osinode8.

Default: 1.

12. l3raprefix – Layer3 Reachable Address Prefix

This value specifies an area address or a part of an area address representing an area address group. This parameter is needed when nodes in different routing domains (see **l3domain**) must communicate. The node must forward then CLNP PDUs to the RA-Destination-Node if the destination NSAPs of CLNP PDUs match with the PA-Prefix.

Type: hexadecimal number.

Range:

- NONE,
- a string of 1 to 13 bytes: first byte (most significant): 10 – 99; rest: 0000 – FFFF.

The value represents an area address or a part of an area address beginning with AFI.

Default: empty string.

13. l3radesnode – Layer3 Reachable Address Destination Node

This parameter is in combination with parameter l3raprefix necessary. The value represents the destination node in the same NE. An internal connection over a domain-boundary is established between this node and the RA-Destination-Node, with IS-IS disabled over that connection.

Type: AID and digit value.

Range:

- 0, osinode{2-8} for osinode1
- 0, osinode1 for osinode2 to osinode 8.

Value 0 indicates that functionality of RA-Prefix is disabled.

Default: 0.

**RTRV-ULSDCC-L3: Retrieve layer 3 related parameters****Detailed behavior description**

The command retrieves system parameter as described in the Output parameter section.

**Example input/output**

The following example shows the result of RTRV-ULSDCC-L3:

```
RTRV-ULSDCC-L3:NE-UNITE::123456::osinode1;  
NE-UNITE 00-12-24 11:01:59  
M 123456 COMPLD  
"osinode1:L3AFI=39,L3IDI=840F,L3DFI=80,  
L3ORG=100100,L3res=0000,L3RD=0000,L3AREA=0000,  
L3SYS=08006A112345,L3SEL=1D,L3ISISNL=L12PRC,  
L3DOMAIN=1,L3RADESNODE=0"  
;
```

**Error responses**

Refer to the "RTRV-HDR: Retrieve header" (5-8) command Error responses section. The error responses listed there apply to the RTRV-ULSDCC-L3 command.

**Related TL1 messages**

- "ENT-ULSDCC-L3: Create a further OSI node" (12-60)
- "ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack." (12-67)
- "DLT-ULSDCC-L3: Delete a node ID other than node-1" (12-74)



## ENT-ULSDCC-L3: Create a further OSI node

---

The ENT-ULSDCC-L3 command is used to create a new OSI node. Up to 8 independent OSI instances can exist in a NE: Node-1 has a NSAP and the nodes 2-8 have each a Network Entity Title (NET). NSAP = NET + SEL Node-1 with AID osinode1 is created by start up of the UNITE NE as default. Node 2-8 can be created and configured with this command by entering an osinode AID which is not used until now, a NET area address and an IS-IS Level. Parameter in the SYSTEM field of the NET are predefined. Further parameter for configuration can be set like IS domain, RA prefix and RA destination node.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ENT-ULSDCC-L3:*tid::ctag::osinode:spec\_block*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. osinode  
A *LambdaUnite*® MSS NE can have up to 8 instances of the OSI stack. Node-1 (osinode1) is default. Node 2-8 (osinode{2-8}) can be created and configured.  
Type: AID.  
Range: osinode{2-8}.



ENT-ULSDCC-L3: Create a further OSI node

### Spec block parameters

1. l3afi – NSAP/NET Authority and Format Identifier  
See definition of ***l3afi*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
2. l3idi – NSAP/NET initial Domain Identifier  
See definition of ***l3idi*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
3. l3dfi – NSAP/NET DSP Format Identifier  
See definition of ***l3dfi*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
4. l3org – NSAP/NET Organization Identifier  
See definition of ***l3org*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
5. l3res – NSAP/NET Reserved  
See definition of ***l3res*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
6. l3rd – NSAP/NET Routing Domain  
See definition of ***l3rd*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
7. l3area – NSAP/NET Area Identifier  
See definition of ***l3area*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
8. l3isisnl – Layer 3 IS Level  
See definition of ***l3isisnl*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
9. l3domain – Layer3 IS Domain  
See definition of ***l3domain*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
10. l3raprefix – Layer3 Reachable Address Prefix  
See definition of ***l3raprefix*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
11. l3radesnode – Layer3 Reachable Address Destination Node  
See definition of ***l3radesnode*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).

### Output format

If the ENT-ULSDCC-L3 is successful, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8).

**Detailed behavior  
description**

The command creates a new OSI node as specified in the command line. The command leads to a reset of the DCF controller and disconnection of management communication. The update shall be reported by means of ENT-ULSDCC-L3 notification.

**Example input/output**

The following example shows the result of ENT-ULSDCC-L3:

```
ENT-ULSDCC-L3:NE-UNITE::4744843::osinode8:13afi=39,
13idi=840F,13dfi=80,13org=100100,13res=0000,13rd=0020,
13area=4711,13isin1=L12,13domain=2;
NE-UNITE 01-01-15 11:59:02
M 4744843 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-ULSDCC-L3 command.

**Validation rule: OSI Node is Already Created**

If the command is used with a value for parameter osinode which is already used for a creation of a OSI node, the command shall be rejected. This means the operation shall be rejected when the node ID is already in the created state.

Error code: IEAE - Entity Data Already Exists, osinode

**Validation rule: Address area value – RA-Prefix value**

If a new RA-Prefix matches with the concerning part of the new area address the provisioning of the new NSAP area address must be rejected.

Error code: IDNV - Input Data not Valid, NSAP Area Address matches with RA-Prefix

ENT-ULSDCC-L3: Create a further OSI node

**Validation rule: RA-prefix value – Address area value**

If a RA-Prefix will be initiated and the value matches with the concerning part of the NSAP Area Address of this node the command must be rejected. The prefix should be specific enough, so that it matches not with NSAPs in both domains.

Error code: IDNV - Input Data not Valid, RA-Prefix matches with the NSAP Area Address

**Validation rule: l3radesnode value must be different from osinode**

The command will be rejected when parameter *l3radesnode* is equal to the *osinode* parameter of the node.

Error code: IDNV - Input Data not Valid, equal node IDs

**Validation rule: l3radesnode must be in the created state**

If the destination node (l3radesnode parameter) is not in the created state, the command must be rejected.

Error code: SNVS - Status, Not in Valid State, l3radesnode not in created state

**Validation rule: consistency of l3radesnode with l3raprefix**

If the value for the RA Destination Node (l3radesnode parameter) is equal to 0 while the value of the RA Prefix (l3raprefix parameter) is not NONE the command must be rejected.

Error code: IDNV - Input Data not Valid, l3raprefix and l3radesnode inconsistent

**Validation rule: l3radesnode value and l3isisnl value**

The l3isisnl parameter value L1 (Level1) is only allowed when the entered l3radesnode=0

Error code: IDNV - Input Data not Valid, constraint l3radesnode

**Validation rule: only one single node in a separate domain supported**

The command shall be rejected when l3domain has an other value than 1 and there is already an other osinode which has a value other than 1 for l3domain.

Error code: IDNV - Input Data not Valid, only a single node in separate domain supported

**Validation Rule: consistency *l3domain* with *l3radesnode* for nodes 2 to 8**

The command shall be rejected when *l3domain* for *osinode2* to *osinode8* has a value of 1 and *l3radesnode* is not equal to 0.

Error code: IDNV - Input Data not Valid, inconsistency  
*l3domain* with *l3radesnode*

**Related TL1 messages**

- “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters”  
(12-54)



## ENT-ULSDCC-L3 Notification

---

The ENT-ULSDCC-L3 command effects a communication SW-reset (protocol stack) and the management connection is lost. Therefore it cannot be guaranteed that a notification could be returned as described below.

**Output format** The ENT-ULSDCC-L3 notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

The ENT-ULSDCC-L3 notification has following specific syntax:

ENT-ULSDCC-L3::*osinode:spec\_block*

### Output parameters

#### Command parameters

1. *osinode*  
See definition of *osinode* in “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67).

#### Spec block parameters

1. *l3afi* – NSAP/NET Authority and Format Identifier  
See definition of *l3afi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
2. *l3idi* – NSAP/NET initial Domain Identifier  
See definition of *l3idi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
3. *l3dfi* – NSAP/NET DSP Format Identifier  
See definition of *l3dfi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
4. *l3org* – NSAP/NET Organization Identifier  
See definition of *l3org* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
5. *l3res* – NSAP/NET Reserved  
See definition of *l3res* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
6. *l3rd* – NSAP/NET Routing Domain  
See definition of *l3rd* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).

7. l3area – NSAP/NET Area Identifier  
See definition of *l3area* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
8. l3isisnl – Layer 3 IS Level  
See definition of *l3isisnl* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
9. l3domain – Layer3 IS Domain  
See definition of *l3domain* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
10. l3raprefix – Layer3 Reachable Address Prefix  
See definition of *l3raprefix* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
11. l3radesnode – Layer3 Reachable Address Destination Node  
See definition of *l3radesnode* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).

**Example output**

```
NE-UNITE 01-01-13 01:57:42
A 000 REPT DBCHG
"TIME=01-47-43,DATE=01-01-13:ENT-ULSDCC-L3::
osinode7:l3afi=39,l3idi=850F,l3dfi=80,l3org=100100,
l3res=0000,l3rd=0020,l3area=4711,l3isisnl=L12,
l3domain=2,l3raprefix=3984,l3radesnode=osinode1"
;
```



## ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.

---

The ED-ULSDCC-L3 command is used to set respectively modify values of layer 3 parameter in existing respectively created OSI stacks. Parameter in the area address field of NSAP respectively NET are to set respectively modify. Parameter in the SYSTEM field and SEL field of NSAP respectively NET are predefined. Further layer 3 parameter to set/modify are IS level, IS domain, RA prefix and RA destination node.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ED-ULSDCC-L3:*tid*::*ctag*::*osinode*:[*spec\_block*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. *osinode*  
A *LambdaUnite*® MSS NE can have up to 8 instances of the OSI stack. Node-1 is created by start up of the *LambdaUnite*® MSS NE as default. Node 2-8 can be created and configured, see command “ENT-ULSDCC-L3: Create a further OSI node” (12-60).  
Type: AID.  
Range: *osinode*{1-8}.

### Spec block parameters

1. l3afi – NSAP/NET Authority and Format Identifier  
See definition of *l3afi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
2. l3idi – NSAP/NET initial Domain Identifier  
See definition of *l3idi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
3. l3dfi – NSAP/NET DSP Format Identifier  
See definition of *l3dfi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
4. l3org – NSAP/NET Organization Identifier  
See definition of *l3org* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
5. l3res – NSAP/NET Reserved  
See definition of *l3res* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
6. l3rd – NSAP/NET Routing Domain  
See definition of *l3rd* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
7. l3area – NSAP/NET Area Identifier  
See definition of *l3area* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
8. l3isisnl – Layer 3 IS Level  
See definition of *l3isisnl* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
9. l3domain – Layer3 IS Domain  
See definition of *l3domain* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
10. l3raprefix – Layer3 Reachable Address Prefix  
See definition of *l3raprefix* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
11. l3radesnode – Layer3 Reachable Address Destination Node  
See definition of *l3radesnode* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).

**Output format**    If the ED-ULSDCC-L3 is successful, the following normal completion response is returned:



ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.

```

        sid date time
M   ctag COMPLD
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8) .

#### Detailed behavior description

The command sets or modifies the parameter of layer 3 in a node as specified in the spec\_block of the command line. Result should be an update of the OSI stack.

Modification of any of the parameters *l3domain*, *l3afi*, *l3idi*, *l3dfi*, *l3org*, *l3res*, *l3rd*, *l3area*, *l3isisnl* leads to a reset of the DCF controller and disconnection of management communication.

The update is reported by means of ED-ULSDCC-L3 notification.

#### Example input/output

The following example shows the result of ED-ULSDCC-L3:

```

ED-ULSDCC-L3:NE-UNITE::4744843::osinode8:l3afi=39,l
3idi=840F,l3dfi=80,l3org=100100,l3res=0000,l3rd=0020,
l3area=4711,l3isisnl=L12,l3domain=2;
        NE-UNITE 01-01-15 11:59:02
M   4744843 COMPLD
;

```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-ULSDCC-L3 command.

##### Validation rule: osinode must be in the created state

The osinode parameter for which changes should be applied must be in the created state, i.e. the value must be either osinode1 or the node must be successfully created via ENT-ULSDCC-L3.

Error code: SNVS - Status, Not in Valid State, osinode not in created state

##### Validation rule: Address area value – RA-prefix value

If an Address Area value will be changed and an existing RA-Prefix matches with the concerning part of the new Area Address the provisioning of the new NSAP Area Address must be rejected.

ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.

Error code: IDNV - Input Data not Valid, NSAP Area Address matches with RA-Prefix

**Validation rule: RA-prefix value – Address area value**

If a RA-Prefix will be changed respectively initiated and the value matches with the concerning part of the NSAP Area Address of this node the command must be rejected. The prefix should be specific enough, so that it matches not with NSAPs in both domains.

Error code: IDNV - Input Data not Valid, RA-Prefix matches with the NSAP Area Address

**Validation rule: *l3radesnode* value must be different from *osinode***

The command will be rejected when parameter *l3radesnode* is equal to the *osinode* parameter of the node.

Error code: IDNV - Input Data not Valid, equal node IDs

**Validation rule: *l3domain* value must be different for current node and *l3radesnode***

If the value for the Domain Group (*l3domain* parameter) is equal for this node and the destination node (*l3radesnode* parameter) the command must be rejected.

Error code: IDNV - Input Data not Valid, equal *l3domain*

**Validation rule: *l3radesnode* value and *l3isisnl* value**

The *l3isisnl* parameter value L1 (Level1) is only allowed when *l3radesnode*=0

Error code: IDNV - Input Data not Valid, constraint *l3radesnode*

**Validation rule: consistency of *l3radesnode* with *l3raprefix***

If the value for the RA Destination Node (*l3radesnode* parameter) is equal to 0 while the value of the RA Prefix (*l3raprefix* parameter) is not NONE the command must be rejected.

Error code: IDNV - Input Data not Valid, *l3prefix* and *l3radesnode* inconsistent

**Validation rule: *l3domain* can not be changed for *osinode1***

If *osinode*=*osinode1* *l3domain* changes should be rejected.

Error code: IDNV - Input Data not Valid, can't change *l3domain* for *osinode1*

ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.

**Validation rule: only one single node in a separate domain supported**

The command shall be rejected when l3domain has an other value than 1 and there is already an other osinode which has a value other than 1 for l3domain.

Error code: IDNV - Input Data not Valid, only a single node in separate domain supported

**Validation rule: consistency l3domain with l3radesnode for nodes 2 to 8**

The command shall be rejected when l3domain for osinode2 to osinode8 has a value of 1 and l3radesnode is not equal to 0.

Error code: IDNV - Input Data not Valid, inconsistency l3domain with l3radesnode

**Validation rule: l3radesnode must be in the created state**

If the destination node (l3radesnode parameter) is not in the created state, the command must be rejected.

Error code: SNVS - Status, Not in Valid State, l3radesnode not in created stat

**Related TL1 messages**

- “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54)
- “ENT-ULSDCC-L3: Create a further OSI node” (12-60)
- “DLT-ULSDCC-L3: Delete a node ID other than node-1” (12-74)



## ED-ULSDCC-L3 notification

---

The ED-ULSDCC-L3 command effects a communication SW-reset (protocol stack) and the management connection is lost. Therefore it cannot be guaranteed that a notification could be returned as described below.

**Output format** The ENT-ULSDCC-L3 notification shall use the general format of a REPT DBCHG (Report Database Chang) notification.

The ED-ULSDCC-L3 notification has the following specific syntax:

ED-ULSDCC-L3::*osinode:spec\_block*

### Output parameters

#### Command parameters

1. *osinode*  
See definition of *osinode* in “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67).

#### Spec block parameters

1. *l3afi* – NSAP/NET Authority and Format Identifier  
See definition of *l3afi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
2. *l3idi* – NSAP/NET initial Domain Identifier  
See definition of *l3idi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
3. *l3dfi* – NSAP/NET DSP Format Identifier  
See definition of *l3dfi* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
4. *l3org* -NSAP/NET Organization Identifier  
See definition of *l3org* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
5. *l3res* – NSAP/NET Reserved  
See definition of *l3res* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
6. *l3rd* – NSAP/NET Routing Domain  
See definition of *l3rd* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).

7. l3area – NSAP/NET Area Identifier  
See definition of ***l3area*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
8. l3isisnl – Layer 3 IS Level  
See definition of ***l3isisnl*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
9. l3domain – Layer3 IS Domain  
See definition of ***l3domain*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
10. l3raprefix – Layer3 Reachable Address Prefix  
See definition of ***l3raprefix*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).
11. l3radesnode – Layer3 Reachable Address Destination Node  
See definition of ***l3radesnode*** in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).

**Example output**

```
NE-UNITE 01-01-13 01:57:42
A 000 REPT DBCHG
"TIME=01-47-43,DATE=01-01-13:ED-ULSDCC-L3::osinode8:
l3afi=39,l3idi=840F,l3dfi=80,l3org=100100,l3res=0000,
l3rd=0020,l3area=4711,l3isisnl=L12,l3domain=2,
l3raprefix=,l3radesnode=0"
;
```



## DLT-ULSDCC-L3: Delete a node ID other than node-1

---

The DLT-ULSDCC-L3 command is used to delete a node ID (osinode) in a UNITE NE which was created via ENT-ULSDCC-L3.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S3  
 Priority: 1  
 Abortable: No.

**Input format** Command Syntax: DLT-ULSDCC-L3:*tid*::*ctag*::*osinode*;

### Input parameters

#### Command parameters

1. tid - Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. ctag - Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. osinode  
 A *LambdaUnite*<sup>®</sup> MSS NE has up to 8 instances of the OSI stack. Node-1 (osinode1) is default. Node 2-8 (osinode{2-8}) can be created and configured and deleted.  
 Type: AID  
 Range: osinode{2-8}.

**Output format** If the DLT-ULSDCC-L3 is successful, the following normal completion response shall be returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8) .

DLT-ULSDCC-L3: Delete a node ID other than node-1

**Detailed behavior description**

The command deletes a node ID (AID value of parameter osinode) at a NE. Only node IDs created via ENT-ULSDCC-L3 command can be deleted. The result should be an update of the OSI stack.

The command leads to a reset of the DCF controller and disconnection of management communication.

The update shall be reported by means of DLT-ULSDCC-L3 notification.

**Example input/output**

The following example shows the result of DLT-ULSDCC-L3:

```
DLT-ULSDCC-L3:NE-UNITE::0962415::osinode2;
      NE-UNITE 01-02-15 09:11:51
M 4744843 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the DLT-ULSDCC-L3 command.

**Validation rule: Reject deletion when node is assigned to LAN or DCC**

The command shall be rejected when a node is disabled to which DCC and/or LAN channel are assigned (via ENT-FECOM/ENT-FECOM-LAN).

Error code: SNVS - Not in Valid State, DCC/LAN channels assigned

**Validation rule: Reject deletion when node is used as RA destination node by OSI node 1**

The command shall be rejected when a node is used as RA destination node by OSI node 1 (l3radesnode = 0).

Error code: SNVS - Not in Valid State, node in use as RA destination node

**Validation rule: osinode must be in the created state**

The osinode parameter for which changes should be applied must be in the created state, i.e. the value must be either osinode1 or the node must be successfully created via ENT-ULSDCC-L3.

Error code: SNVS - Status, Not in Valid State, osinode not in created state

DLT-ULSDCC-L3: Delete a node ID other than node-1

**Related TL1 messages**

- “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54)
- “ENT-ULSDCC-L3: Create a further OSI node” (12-60)
- “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)





## DLT-ULSDCC-L3 Notification

---

**Output format** The DLT-ULSDCC-L3 notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

The DLT-ULSDCC-L3 notification shall have following specific syntax:

DLT-ULSDCC-L3::*osinode*

### Output parameters

#### Command parameters

1. *osinode*  
See definition of *osinode* in “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67).

### Example output

```
NE-UNITE 01-02-15 09:18:27
A 000 REPT DBCHG
"TIME=09-27-36,DATE=01-02-15:DLT-ULSDCC-L3::osinode8"
;
```



## Autonomous notification

---

**Start-up with default  
database**

The event "Start-up with default DB" causes that the OSI node 1 with AID osinode1 is created.



# OSI transport layer and TARP

## Overview

---

**Purpose** This section describes TL1 commands applicable to layer 4 of the OSI stacks.

### Contents

|                                                                                               |                       |
|-----------------------------------------------------------------------------------------------|-----------------------|
| RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters                                       | <a href="#">12-80</a> |
| ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks                             | <a href="#">12-84</a> |
| ENT-ULSDCC-L4 notification                                                                    | <a href="#">12-89</a> |
| DLT-ULSDCC-L4: Delete TARP manual adjacent NSAP address in layer 4 of the specified OSI stack | <a href="#">12-91</a> |
| DLT-ULSDCC-L4 notification                                                                    | <a href="#">12-93</a> |



## RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters

---

The RTRV-ULSDCC-L4 command is used to retrieve layer 4 parameters of the OSI stacks. Layer 4 include some TARP parameter which can be modified and the TARP Manual Adjacencies parameter which can be provided, modified or deleted.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: RTRV-ULSDCC-L4:*tid::ctag[:osinode]*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.

**Output format** If the RTRV-ULSDCC-L4 is successful, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "osinode:spec_block"
  ...
  "osinode:spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Manual adjacencies** If more than one manual adjacency is defined for one osinode, they appears on separate output lines.

**Example:**

```
sid date time
M ctag COMPLD
"osinode1:<other spec_block parameters>"
"osinode1:l4ajnsap=39840F80000000000000000000000001
23456789ABC00"
"osinode1:l4ajnsap=39840F80000000000000000000000002
3456789ABCD00"
;
```

**Output parameters**

**Spec block parameters**

1. l4etof - TARP origination  
This parameter only valid for node-1. It is used to enable or disable TARP Origination function and is valid for all interfaces of a node.  
Type: Alphanumeric value set.  
Range: ENABLE, DISABLE.  
Default: ENABLE (for osinode1), DISABLE (for osinode2-8, fixed).
2. l4etpf – TARP propagation  
This parameter is used to enable or disable TARP Propagation function for a node.  
Type: Alphanumeric value set.  
Range:
  - ENABLE (default)
  - DISABLE.
3. l4etrf – TARP responder  
This parameter is only valid for node-1. It is used to enable or disable TARP responder function  
Type: Alphanumeric value set  
Range:
  - ENABLE
  - DISABLE.  
Default: For node-1: ENABLE DISABLE (fixed for nodes 2-8).

4. 14ajnsap – TARP Manual Adjacency List  
This parameter specifies the NSAP address portion of an entry in the TARP Manual Adjacent NE list. Up to two addresses are possible for each node in a *LambdaUnite*® MSS NE.  
Type: hexadecimal number or alphanumeric value set.  
Range: NONE, 20 octet (40-digit hex) long address.  
The NSAP address / NET is composed of the following components:
  - 14ajafi 10 – 99
  - 14ajidi 0000 – FFFF
  - 14dfi 00 – FF
  - 14alorg 000000 – FFFFFFFF
  - 14ajres 0000 – FFFF
  - 14jrd 0000 – FFFF
  - 14jarea 0000 – FFFF
  - 14ajsys 000000000000 – FFFFFFFFFFFFFF
  - SEL 00 The last byte indicates the selector and is not to set.
Note: For more details see description of ENT-ULSDCC-L3.  
Default: NONE (no TARP manual adjacencies).

**Detailed behavior description** The command retrieves system parameter as described in the Output parameter section.

**Example input/output** The following example shows the result of RTRV-ULSDCC-L4:  
RTRV-ULSDCC-L4:NE-UNITE::456789::osinode1;  
NE-UNITE 01-17-01 18:11:01  
M 456789 COMPLD  
"OSINODE1:14etof=DISABLE,14etpf=ENABLE,14etrif=ENABLE,  
14ajnsap=39840F80000000000000000000000000123456789ABC00"  
;

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-ULSDCC-L4 command.

OSI transport layer and TARP  
RTRV-ULSDCC-L4: Retrieve OSI layer 4  
related parameters

*TL1 messages - data communications network*

**Related TL1 messages**

- “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84)
- “DLT-ULSDCC-L4: Delete TARP manual adjacent NSAP address in layer 4 of the specified OSI stack” (12-91)



## ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks

---

Among other Layer 4 covers the TARP functionality. The parameter of this command for *LambdaUnite*<sup>®</sup> MSS NEs are only related to the TARP.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ENT-ULSDCC-L4:*tid*::*ctag*::*osinode*:*[spec\_block]*;

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. *osinode*  
See definition of *osinode* in “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67).

#### Spec block parameters

1. *l4etof* – TARP origination  
See definition of *l4etof* in “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80).
2. *l4etpf* – TARP propagation  
See definition of *l4etpf* in “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80).
3. *l4etrf* – TARP responder  
See definition of *l4etrf* in “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80).



4. l4ajafi – TARP Man. Adjacency: NET Authority and Format Identifier  
This parameter of NSAP is used to set or retrieves the format for the rest of the address.  
Type: hexadecimal number.  
Range: 10 – 99.  
Default: Value of authority and format identifier part of NET of node defined by parameter *osinode*.
5. l4ajidi – TARP Man. Adjacency: NET initial Domain Identifier  
This NSAP part consists two values:
  - a 3 semi-octet (3-digit hexadecimal) IDI part to specify the country code indicating the registration authority responsible for the allocation and assignment of the NSAP address.
  - a 1 semi-octet (1-digit hexadecimal) IDI pad part.The parameter is used for set and retrieve values.  
Type: hexadecimal number.  
Range: 0000 – FFFF.  
Default: Value of initial domain identifier part of NET of node defined by parameter *osinode*.
6. l4ajdfi – TARP Man. Adjacency: NET DSP Format Identifier  
The purpose of this 1 octet (2-digit hex) NSAP part is to set or retrieve the format for the rest of the address.  
Type: hexadecimal number.  
Range: 00 – FF.  
Default: Value of DSP format identifier part of NET of node defined by parameter *osinode*.
7. l4ajorg – TARP Man. Adjacency: NET Organization Identifier  
This parameter of NSAP is used to set or retrieve the NSP (allocated company code).  
Type: hexadecimal number.  
Range: 000000 – FFFFFFFF.  
Default: Value of organization part of NET of node defined by parameter *osinode*.
8. l4ajres -TARP Man. Adjacency: NET Reserved  
This NSAP part currently has not been assigned a specific purpose.  
Type: hexadecimal number.  
Range: 0000 – FFFF.  
Default: Value of reserved part of NET of node defined by parameter *osinode*.

9. l4ajrd – TARP Man. Adjacency: NET Routing Domain  
This parameter of NSAP is used to set or retrieve a unique routing domain within an administrative domain. A standard for use has not been defined until now.  
Type: hexadecimal number.  
Range: 0000 – FFFF.  
Default: Value of routing domain part of NET of node defined by parameter *osinode*.
10. l4ajarea – TARP Man. Adjacency: NET Area Identifier  
This parameter of NSAP is used to set or retrieve the area. So NEs can be identified in the same area.  
Type: hexadecimal number.  
Range: 0000 – FFFF.  
Default: Value of area part of NET of node defined by parameter *osinode*.
11. l4ajsys – TARP Man. Adjacency: NET System Identifier  
This system parameter of the NSAP is set by the Equipment Manufacturer. The value is fix and globally unique among all NEs. For values of NSAP/NET system parameter.  
Type: hexadecimal number.  
Range: 000000000000 – FFFFFFFF.

**Output format** If the ENT-ULSDCC-L4 is successful, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Detailed behavior description** The command sets respectively modifies layer 4 parameter for a node as specified in the spec\_block of the command line. Result should be an update of the OSI stack.

Modification of any of the parameters *l4etof*, *l4etpf*, *l4etrf* leads to a reset of the DCF controller and disconnection of management communication.

The update is reported by means of ENT-ULSDCC-L4 notification.

Up to two TARP manual adjacencies are possible for each node in an *LambdaUnite*® MSS NE. One manual adjacency is added with each command request.

In order to update/modify an already provisioned manual adjacency, the following command sequence must be applied:

1. delete the manual adjacency to be modified by means of DLT-ULSDCC-L4
2. add the manual adjacency with the new values by means of ENT-ULSDCC-L4.

#### Example input/output

The following example shows the result of ENT-ULSDCC-L4:

```
ENT-ULSDCC-L4:NE-UNITE::4744843::osinode1:l4ajafi=39,  
l4ajidi=840F,l4ajdfi=80,l4ajorg=100100,l4ajres=0000,  
l4ajrd=0020,l4ajarea=4711,l4ajsys=08006A112345;  
NE-UNITE 01-01-18 10:09:52  
M 4744843 COMPLD  
;
```

#### Error responses

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-ULSDCC-L4 command.

##### Validation rule: TARP origination only valid for node-1

The parameter *l4etof* can only be set to ENABLE for osinode1. When trying to ENABLE *l4etof* for osinode2-8 the command should be rejected.

Error code: IDRG - Input Data Range Error, *osinode*

##### Validation rule: TARP responder only valid for node-1

The parameter *l4etrf* can only be set to ENABLE for osinode1. When trying to ENABLE *l4etrf* for osinode2-8 the command should be rejected.

Error code: IDRG - Input Data Range Error, *osinode*”

##### Validation rule: Not allowed to disable TARP when T-TD is enabled

The parameters *l4etof*, *l4etpf*, *l4etrf* for osinode1 can not be disabled when T-TD is enabled (see “ED-NE: Edit NE” (12-8) *tl1tcpipgw*). The command should be rejected in this case.

Error code: SNVS - Status, Not in Valid State, T-TD enabled.

**Validation rule: Can't disable TARP propagation while LAN TARP storm suppression is enabled**

If it is tried to set l4etpf=DISABLE while lantlss=ENABLE (see RTRV-FECOM-LAN) the command shall be denied.

Error code: INVS - Status, Not in Valid State, TARP propagation can not be disabled

**Validation rule: l4ajsys must be supplied**

The parameter *l4ajsys* must be supplied when manual adjacencies are configured, i.e. when any of the other NET parameters *l4ajafi*, *l4ajidi*, *l4ajdfi*, *l4ajorg*, *l4ajrd*, *l4ajarea* is present, otherwise the command should be rejected.

Error code: IDNC - Input Data Not Consistent

**Validation rule: l4ajsys per osinode must be different**

Each manual adjacency for one osinode must have a different value for the parameter *l4ajsys*, i.e. all pairs of *osinode/l4ajsys* must be unique in the system.

Error code: IDNV - Input, Data Not Valid, l4ajsys/osinode not unique

## Related TL1 messages

- “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80)
- “DLT-ULSDCC-L4: Delete TARP manual adjacent NSAP address in layer 4 of the specified OSI stack” (12-91)



## ENT-ULSDCC-L4 notification

---

**Output format** The ENT-ULSDCC-L4 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

Syntax: The ENT-ULSDCC-L4 notification has the following specific syntax:

ENT-ULSDCC-L4::*osinode:spec\_block*

### Output parameters

#### Command parameters

1. *osinode*  
See definition of *osinode* in “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67) .

#### Spec block parameters

1. *l4etof* – TARP origination  
See definition of *l4etof* in “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80).
2. *l4etpf* – TARP propagation  
See definition of *l4etpf* in “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80).
3. *l4etr* – TARP responder  
See definition of *l4etr* in “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80).
4. *l4ajafi* – TARP Man. Adjacency: NET Authority and Format Identifier  
See definition of *l4ajafi* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).
5. *l4ajidi* – TARP Man. Adjacency: NET initial Domain Identifier  
See definition of *l4ajidi* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).
6. *l4ajdfi* – TARP Man. Adjacency: NET DSP Format Identifier  
See definition of *l4ajdfi* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).
7. *l4ajorg* – TARP Man. Adjacency: NET Organization Identifier  
See definition of *l4ajorg* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).

8. 14ajres – TARP Man. Adjacency: NET Reserved  
See definition of *14ajres* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).
9. 14ajrd – TARP Man. Adjacency: NET Routing Domain  
See definition of *14ajrd* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).
10. 14ajarea – TARP Man. Adjacency: NET Area Identifier  
See definition of *14ajarea* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).
11. 14ajsys – TARP Man. Adjacency: NET System Identifier  
See definition of *14ajsys* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).

### Example output

```
NE-UNITE 01-01-19 04:29:01
A 000 REPT DBCHG
"TIME=04-29-00,DATE=01-01-19:ENT-ULSDCC-L4::
osinode1:14etof=DISABLE,14etpf=ENABLE,14etrf=DISABLE,
14ajafi=39,14ajidi=0,14ajdfi=80,14ajorg=100100,
14ajres=0000,14ajrd=0020,14ajarena=4711,
14ajsys=08006A112345"
;
```



## DLT-ULSDCC-L4: Delete TARP manual adjacent NSAP address in layer 4 of the specified OSI stack

---

The DLT-ULSDCC-L4 command is used to delete one TARP manual adjacent NSAP address in the specified OSI node. The address to be deleted is specified by the system ID in the *spec\_block* part of the command line.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S3  
 Priority: 1  
 Abortable: No.

**Input format** Command Syntax: DLT-ULSDCC-L4:*tid*::*ctag*::*osinode*:[*spec\_block*];

### Input parameters

#### Command parameters

1. *tid* – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. *ctag* – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
3. *osinode*  
 See definition of *osinode* in “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67).

#### Spec block parameters

1. *l4ajsys* – New Manual Adjacency: NET System Identifier  
 See definition of *l4ajsys* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).

**Output format** If the DLT-ULSDCC-L4 is successful, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
;
```

OSI transport layer and TARP  
DLT-ULSDCC-L4: Delete TARP manual  
adjacent NSAP address in layer 4 of the  
specified OSI stack

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Detailed behavior  
description**

The command deletes one NSAP address from the TARP Manual Adjacency list in layer 4 of a OSI stack. Result should be an update of the OSI stack. Multiple Manual Adjacent NEs are deleted using multiple occurrences of the DLT-ULSDCC-L4 command.

The update is reported by means of DLT-ULSDCC-L4 notification.

**Example input/output**

The following example shows the result of DLT-ULSDCC-L4:

```
DLT-ULSDCC-L4:NE-UNITE::4744843::osinode1:
14ajsys=08006A112345;
    NE-UNITE 01-01-19 10:09:52
M 4744843 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the DLT-ULSDCC-L4 command.

**Validation rule: Check for existing TARP manual adjacent NSAP**

The removal of a TARP manual adjacency shall only be allowed if an entry with the specified TARP manual adjacent NSAP exists for the *osinode*.

Error Code: SNVS - Status, Not in Valid State, unknown TARP Manual Adjacent NSAP

**Related TL1 messages**

- “RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters” (12-80)
- “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84)





## DLT-ULSDCC-L4 notification

---

**Output format** The DLT-ULSDCC-L4 notification uses the general format of a REPT DBCHG (Report Database Change) notification.

The DLT-ULSDCC-L4 notification has the following specific syntax:

DLT-ULSDCC-L4::*osinode:spec\_block*

### Output parameters

#### Command parameters

1. *osinode*  
See definition of *osinode* in “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54).

#### Spec block parameters

1. *l4ajsys* – New Manual Adjacency: NET System Identifier  
See definition of *l4ajsys* in “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks” (12-84).

### Example output

```
NE-UNITE 01-01-19 04:29:01
A 000 REPT DBCHG
"TIME=04-29-00,DATE=01-01-19:DLT-ULSDCC-L4::
osinode1:l4ajsys=08006A112345"
;
```



# TCP/IP parameters

## Overview

---

**Purpose** This section describes TL1 commands applicable to the TCP/IP stack.

### Contents

|                                      |                        |
|--------------------------------------|------------------------|
| RTRV-ULS: Retrieve upper layer stack | <a href="#">12-95</a>  |
| ENT-ULS: Enter upper layer stack     | <a href="#">12-98</a>  |
| ENT-ULS Notification                 | <a href="#">12-101</a> |



## RTRV-ULS: Retrieve upper layer stack

---

The RTRV-ULS command is used to retrieve global parameters of the TCP/IP stack.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
 Priority: 1  
 Abortable: Yes.

**Input format** Command Syntax: **RTRV-ULS**:tid::ctag;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
 Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.

**Output format** If the RTRV-ULS request is successful, the following normal completion message shall be returned:

```

      sid date time
M  ctag COMPLD
   "spec_block"
      .      .      .
      .      .      .
      .      .      .
   "spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

## Output parameters

1. ip\_drad – IP Default Router Address  
This parameter shall be used to set or retrieve the IP default router address (IPv4) to which the host points to, needed for the T-TD functionality.  
Type: Four dot separated numeric strings OR empty string The empty string value is used as indication for an invalid/undefined IP address.  
Range: Each numeric string: 0 .. 255.  
Default: empty string.
2. ip\_drlan – IP Default Router LAN port AID  
This parameter specifies with which LAN port the default router is associated.  
Type: AID.  
Range: LanPortAID. The value lanall is not allowed.  
Default: 1-1-lan1.
3. lv\_port – T-TD Length Value Port  
This parameter shall be used to set or retrieve the port number over which the T-TD function is accessible using the Length Value encoding method.  
Type: Numeric string  
Range: Each numeric string: 0 .. 65535.  
Default: 3081.
4. raw\_port – T-TD Raw Mode Port  
This parameter shall be used to set or retrieve the port AID of number over which the T-TD function is accessible using raw-mode encoding.  
Type: Numeric string  
Range: Each numeric string: 0 .. 65535.  
Default: 3082.

## Detailed behavior description

The command retrieves system parameters as described in the Output parameter section.

## Example input/output

The following example shows the result of a RTRV-ULS command:

```
RTRV-ULS:LT-UNITE::123456;  
LT-UNITE 00-11-01 08:00:00  
M 123456 COMPLD  
"ip_ad_astn=127.93.94.10"
```

RTRV-ULS: Retrieve upper layer stack

```
"ip_drad=198.84.65.20"  
"ip_drlan=1-1-lan1"  
"lv_port=3081"  
"raw_port=3082"  
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-NE command.

**Related TL1 Messages** “ENT-ULS: Enter upper layer stack” (12-98)



## ENT-ULS: Enter upper layer stack

---

The ENT-ULS command is used to provision parameters of the TCP/IP stack.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S4  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: ENT-ULS:*tid::ctag:::spec\_block*;

### Input parameters

#### Command parameters

1. tid – Target Identifier  
See definition of tid in RTRV-ULS.
2. ctag – Correlation Tag  
See definition of ctag in RTRV-ULS.

#### Spec block parameters

1. ip\_ad\_astn – IP Address of ASTN  
This parameter shall be used to set the router ID for the SCN and the SNN node.  
Note: The provisioning of this IP address is ONLY ALLOWED ONCE.  
Type: Four dot separated numeric strings.  
Range: 0.0.0.0 ... 223.255.255.255 with the exception of 0.0.0.0.
2. ip\_drad – IP Default Router Address  
This parameter shall be used to set or retrieve the IP default router address (IPv4) to which the host points to, needed for the T-TD functionality.  
Type: Four dot separated numeric strings.  
Range: Each numeric string: 0 .. 255.
3. ip\_drlan – IP Default Router LAN port AID  
See definition of *ip\_drlan* in “RTRV-ULS: Retrieve upper layer stack” (12-95).

ENT-ULS: Enter upper layer stack

4. *lv\_port* – T-TD Length Value Port  
See definition of *lv\_port* in “RTRV-ULS: Retrieve upper layer stack” (12-95).
5. *raw\_port* – T-TD Raw Mode Port  
See definition of *raw\_port* in “RTRV-ULS: Retrieve upper layer stack” (12-95).

**Output format** If the ENT-ULS request is successful, the following normal completion message shall be returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Detailed behavior description**

The command sets the parameters as specified for the input spec\_block parameters.

Reset: Modification of any of the parameters *ip\_ad\_astn*, *lv\_port*, *raw\_port* leads to a reset of the DCF controller and disconnection of management communications.

**Example input/output**

The following example shows the result of an ENT-ULS command, which modifies the port number used for T-TD length value encoding:

```
ENT-ULS:LT-UNITE::123456::lv_port=7777;
LT-UNITE 00-11-01 08:00:00
M 123456 COMPLD
;
```

**Error responses**

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-ULS command.

**Validation rule: no TCP port number change with enabled T-TD function**

T-TD related port numbers cannot be changed as long as T-TD function is enabled.

Error Code: SNVS - Status, Not in Valid State, port numbers cannot be changed when T-TD is enabled

**Validation rule: check for correct IP configuration**

The ENT-ULS command shall only be allowed if there is already a valid IP configuration (*ip\_ad* - IP address of LAN, *ip\_snm* - subnet mask of LAN) provisioned for the LAN port specified by *ip\_drlan*.

Error Code: SNVS - Status, Not in Valid State, incomplete IP configuration

**Validation rule: check for correct configured Default Router LAN Port**

The system do not allow to change the default router address (*ip\_drad*) as long as there is no default router LAN port (*ip\_drlan*) specified which has a valid IP Address (*ip\_ad*) and IP Subnet Mask (*ip\_snm*) configured.

Error Code: SNVS - Status, Not in Valid State, default router LAN port not configured

**Validation rule: check for correct OSI node configuration**

The system shall not allow to set *ip\_drlan* (IP Default Router LAN) as long as this LAN port is not assigned to OSI node 1(see ENT-FECOM-LAN).

Error Code: SNVS - Status, Not in Valid State, wrong IP configuration.

**Validation rule: check that raw\_port and lv\_port are unequal**

The ENT-ULS command shall be refused, if the two port parameters *raw\_port* and *lv\_port* are set to equal values.

Error Code: IDNC - Input, Data Not Consistent, *raw\_port* and *lv\_port* must be unequal

**Validation rule: check of the maintenance condition**

System must be in MCOND for change of *ip\_ad\_astn*.

Error Code: SNVS - Status, Not in Valid State, not in Maintenance Condition

**Related TL1 messages**

- “RTRV-ULS: Retrieve upper layer stack” (12-95)





## ENT-ULS Notification

---

**Output format** The ENT-ULS notification shall use the general format of a REPT DBCHG (Report Database Change) notification.

The ENT-ULS notification shall have following specific syntax:

ENT-ULS::*spec\_block*

The output parameters *sid*, *date*, *time*, and *ctag* are described in the REPT DBCHG notification.

### Output parameters

1. ip\_ad\_astn – IP Address of ASTN  
See definition of *ip\_ad\_astn* in “ENT-ULS: Enter upper layer stack” (12-98).
2. ip\_drad – IP Default Router Address  
See definition of *ip\_drad* in “ENT-ULS: Enter upper layer stack” (12-98).
3. ip\_drlan – IP Default Router LAN port AID  
See definition of *ip\_drlan* in “RTRV-ULS: Retrieve upper layer stack” (12-95).
4. lv\_port – T-TD Length Value Port  
See definition of *lv\_port* in “RTRV-ULS: Retrieve upper layer stack” (12-95).
5. raw\_port – T-TD Raw Mode Port  
See definition of *raw\_port* in “RTRV-ULS: Retrieve upper layer stack” (12-95).

**Example output** The following is an example ENT-ULS notification in case the lv\_port parameter was changed:

```
LT-UNITE 00-11-01 15:00:00
A 000 REPT DBCHG
"TIME=15-00-00,DATE=00-11-03:ENT-ULS::lv_port=7777"
;
```

□

# IP Map

## Overview

---

- Purpose** This section describes commands dealing with the IP map:
- the IP map provides T-TD access to the NE via one of the LANs that is assigned to node 1. Only managers registered in the IP map are allowed to access the NE via TCP/IP.
  - historically, the application context identifier for TL1 over OSI connections has been used to tailor the characteristics of the TL1 session (e.g. which events are reported using TL1 notifications) to the calling manager.
  - ADM40G bases the characteristics of a TL1 session on the user name passed in the ACT-USER command rather than the application context identifier.
  - still, for backwards compatibility, the feature of having the application context identifier being determined by the address of the calling manager is required on the T-TD.

### Contents

|                                  |                          |
|----------------------------------|--------------------------|
| RTRV-IP-MAP: Retrieve TCP/IP map | <a href="#">12-103</a>   |
| ENT-IP-MAP: Enter TCP/IP map     | <a href="#">12-106</a>   |
| ENT-IP-MAP Notification          | <a href="#">12-109</a>   |
| DLT-IP-MAP: Delete TCP/IP map    | <a href="#">12-110</a>   |
| DLT-IP-MAP notification          | <a href="#">12-112</a>   |
|                                  | <input type="checkbox"/> |

## RTRV-IP-MAP: Retrieve TCP/IP map

---

The RTRV-IP-MAP command retrieves the entries from the IP map.

The IP map describes the correlation of manager IP addresses to application contexts. Only managers which are entered in this map are allowed to access the NE via TCP/IP (T-TD function). The *tl1tcpipgw* parameter in the RTRV-NE command indicates whether or not the mapping feature is enabled.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S1  
Priority: 1  
Abortable: Yes.

**Input format** Command Syntax: **RTRV-IP-MAP:tid::ctag;**

### Input parameters

#### Command parameters

1. tid – Target Identifier  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.
2. ctag – Correlation Tag  
Refer to the “RTRV-HDR: Retrieve header” (5-8) command for input parameter syntax and description of this parameter.

**Output format** If the RTRV-IP-MAP request is successful, the following normal completion message shall be returned:

```
sid date time
M ctag COMPLD
"system::spec_block"
...
"system::spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of the “RTRV-HDR: Retrieve header” (5-8) command.

**Output parameters**

1. system – system AID  
This parameter shall denote the system AID of the NE.  
Type: AID  
Range: system (default).
2. ip – IP Address  
This parameter shall be used to set or retrieve the IP address(es) of the manager(s) of the NE.  
Type: IPv4 address: four dot separated numeric strings.  
Values: IPv4 address: Each numeric string: 0 .. 255. Number of entries: Mmaximum of 20 entries allowed.  
Default: null.
3. acid – Application Context ID  
This parameter shall be used to set or retrieve the application context ID to be assigned to a particular manager IP address.  
Type: Alphanumeric string of length 0 .. 23.  
Range: TL1MAINTENANCE, TL1MEMORYADMINISTRATION, TL1TEST, TL1OTHER1, TL1PEERCOMM.  
Default: TL1PEERCOMM.  
Although acid is a mandatory parameter it will not be evaluated in the NE. The parameter is present for backward compatibility.

**Detailed behavior description**

The command shall retrieve the spec\_block parameters as described in the Output parameter section.

Sorting: If several managers are entered, the system shall respond with one line per *ip* parameter and sort the output according the *ip* parameter.

**Example input/output**

The following example shows the result of a RTRV-IP-MAP command with one manager entered:

```
RTRV-IP-MAP:LT-UNITE::123456;
LT-UNITE 00-11-01 08:00:00
M 123456 COMPLD
    "system::ip=198.78.46.8,acid=TL1MAINTENANCE"
    "system::ip=198.78.46.13,acid=TL1TEST"
;
```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-NE-IP-MAP command.

**Related TL1 Messages**

- “DLT-IP-MAP: Delete TCP/IP map” (12-110)
- “ENT-IP-MAP: Enter TCP/IP map” (12-106)



## ENT-IP-MAP: Enter TCP/IP map

---

The ENT-IP-MAP can be used to create entries in the IP map.

The ENT-IP-MAP command allows to enter a manager IP address and its application context ID to provide T-TD access to the NE via one of the LANs assigned to node 1. To map multiple managers the command has to be executed for each manager. The *tl1tcpipgw* parameter in the ED-NE command enables or disables the mapping feature.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S3  
Priority: 1  
Abortable: No.

**Input format** Command Syntax: **ENT-IP-MAP:tid::ctag:::spec\_block;**

### Input parameters

#### Command parameters

1. tid – Target Identifier  
See definition of *tid* in “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103).
2. ctag – Correlation Tag  
See definition of *ctag* in “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103).

#### Spec block parameters

1. ip – IP address  
See definition of *ip* in “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103).  
This parameter is mandatory.
2. acid – Application Context ID  
See definition of *acid* in “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103).  
This parameter is optional. If the parameter is omitted the default value is used (new entry) or the existing value is left unchanged (existing entry).

ENT-IP-MAP: Enter TCP/IP map

**Output format** If the ENT-IP-MAP request is successful, the following normal completion message shall be returned:

```

    sid date time
M  ctag COMPLD
;

```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Detailed behavior description** The command shall set the parameters as specified for the input spec\_block parameters.

**Example input/output** The following example shows the result of an ENT-IP-MAP command:

```

ENT-IP-MAP:LT-UNITE::123456:::acid=TL1MEMORYADMINISTRATION,
ip=198.78.46.8;
    LT-UNITE 00-11-01 08:00:00
M  123456 COMPLD
;

```

**Error responses** Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the ENT-IP-MAP command.

**Validation rule: Check for correct IP configuration**

The adding of an entry to the IP map shall only be allowed if there is already a valid IP configuration (ip\_ad - IP address of LAN, ip\_snm - subnet mask of LAN) provisioned for at least one LAN port.

**Error code:** SNVS - Status, Not in Valid State, incomplete IP configuration

**Validation rule: Check for duplicate entries**

The adding of an entry to the IP map shall not be allowed, if the IP address is already contained in one of the existing entries.

**Error Code:** IDNV - Input, Data Not Valid, duplicate IP Map entry

ENT-IP-MAP: Enter TCP/IP map

**Related TL1 messages**

- “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103)
- “DLT-IP-MAP: Delete TCP/IP map” (12-110)





## ENT-IP-MAP Notification

---

**Output format** The ENT-IP-MAP command shall not generate a REPT DBCHG notification. This is due to a potential security hazard: any listening manager who receives this notification could otherwise fake its own IP address to get access to the T-TD.



## DLT-IP-MAP: Delete TCP/IP map

---

The DLT-IP-MAP can be used to delete one entry in the TCP/IP application context ID map which was created via ENT-IP-MAP. The `tl1tcpipgw` parameter in the ED-NE command enables or disables the mapping feature.

**Properties** Login Privilege: User Privilege Code (UCFC/UCAL): S3  
 Priority: 1  
 Abortable: No.

**Input format** Command Syntax: **DLT-IP-MAP:***tid::ctag:::spec\_block;*

### Input Parameters

#### Command parameters

1. `tid` – Target Identifier  
 See definition of *tid* in “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103).
2. `ctag` – Correlation Tag  
 See definition of *ctag* in “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103).

#### Spec block Parameters

1. `ip` – IP address  
 This parameter is optional. If it is omitted the mapping is not changed and a normal COMPLD message shall be returned.

**Output format** If the DLT-IP-MAP request is successful, the following normal completion message shall be returned:

```
sid date time
M ctag COMPLD
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Detailed behavior  
description**

The command shall delete the mapping entry if the ip parameter was specified and could be found in the TCP/IP application context ID mapping.

**Example input/output**

The following example shows the result of an DLT-IP-MAP command:

```
DLT-IP-MAP:LT-UNITE::123456::ip=198.78.46.8;  
    LT-UNITE 00-11-01 08:00:00  
M 123456 COMPLD  
;
```

**Error responses**

Refer to the RTRV-HDR command ERROR RESPONSES section. The error responses listed there apply to the DLT-IP-MAP command.

**Validation rule: Check for known IP address**

The removal of an entry from the IP map shall only be allowed if entries with the specified IP address are used within the IP map.

**Error code:** SNVS - Status, Not in Valid State, unknown IP address within MAP

**Related TL1 Messages**

- “RTRV-IP-MAP: Retrieve TCP/IP map” (12-103)
- “ENT-IP-MAP: Enter TCP/IP map” (12-106).



## DLT-IP-MAP notification

---

**Output format** The DLT-IP-MAP command shall not generate a REPT DBCHG notification. This is due to a potential security hazard: any listening manager who receives this notification could otherwise fake its own IP address to get access to the T-TD.



# MAPs

## Overview

---

**Purpose** This section describes TL1 commands applicable to Maps.

**Contents**

|                                          |                          |
|------------------------------------------|--------------------------|
| RTRV-MAP-NEIGHBOR: Retrieve map neighbor | <a href="#">12-114</a>   |
| RTRV-MAP-NETWORK: Retrieve network map   | <a href="#">12-119</a>   |
|                                          | <input type="checkbox"/> |

## RTRV-MAP-NEIGHBOR: Retrieve map neighbor

---

The RTRV-MAP-NEIGHBOR command will retrieve a list of all immediate OSI neighbors to the local NE (node or NE). This can include other NEs, as well as neighbors on the LAN, such as the *WaveStar*® CIT.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): S1  
                      Priority: 1  
                      Abortable: Yes.

**Input format**    Command Syntax: RTRV-MAP-NEIGHBOR:*tid*::*ctag*;

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.  
       Type: TID
2.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.  
       Type: CTAG

**Output format**    If the RTRV-MAP-NEIGHBOR request is successful, the following normal completion message is returned:

```
sid date time
M ctag COMPLD
  "[rate]:thru[,lpaid]:spec_block"
  ...
  "[rate]:thru[,lpaid]:spec_block"
;
```

Ordering of output lines: Output is sorted in ascending order first by *lpaid*.

RTRV-MAP-NEIGHBOR: Retrieve map  
neighbor

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output parameter section of “RTRV-HDR: Retrieve header” (5-8) .

## Output parameters

### Command parameters

1. rate – DCC Port Rate  
This parameter is only available for a DCC neighbor and provides the optical port rate as used in RTRV-*rr*.  
Type: value set  
Range:
  - STM1
  - STM4
  - STM16
  - STM64
  - STM256
  - OC3
  - OC12
  - OC48
  - OC192
  - OC768.Default: n/a – as determined by the port type.
2. thru – Connected Through  
This parameter specifies the type of connectivity between the NE and its neighbor.  
Type: value set.  
Range: DCC, LAN.  
Default: n/a – as determined by the type of connection.
3. lpaid – Local Port AID  
This parameter provides the SPortAID of the optical port in case thru=DCC or the LanPortAID in case thru=LAN.  
Type: AID.  
Range: SPortAID in case thru=DCC or LanPortAID in case thru=LAN as defined in section AID Structure.

RTRV-MAP-NEIGHBOR: Retrieve map  
neighbor

### Spec block parameters

1. nsap – Network Service Access Point  
This field defines the ASAP of the neighbor.  
Type: 20 byte octet string in 40 digit hex representation.  
Range: The NSAP address/NET is composed of the following components:
  - l3idp (l3afi and l3idi)
  - l3dfi,
  - l3org,
  - l3res,
  - l3rd,
  - l3area,
  - l3sys,
  - l3se.lSee “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54) for details.
2. npaid – Neighbor Port AID  
This parameter is only available for DCC neighbors and provides the port AID of the optical port of the OSI neighbor. (Peer of *lpaid*)  
Since the neighbor NE might have a different AID structure it is interpreted as a string.  
Type: AID string.  
Range: up to 20 characters-
3. tid – Neighbor TID  
This parameter is only available for DCC neighbors. It provides the TID value of the neighbor NE.  
Type: TID  
Range: Refer to the “RTRV-HDR: Retrieve header” (5-8) command for legal values and a general description of TIDs.
4. dcctype – DCC Type  
This parameter is only available for DCC neighbors. It specifies whether the values displayed in the *spec\_block* refer to the MS/LINE or RS/SECTION DCC.  
Type: value set.





RTRV-MAP-NEIGHBOR: Retrieve map  
neighbor

**Related TL1 messages**

- “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)
- “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54)
- “RTRV-MAP-NETWORK: Retrieve network map” (12-119)



## RTRV-MAP-NETWORK: Retrieve network map

---

The RTRV-MAP-NETWORK command will retrieve a list of OSI nodes, reachable from the local NE (NE). This can include other NEs, other nodes on the local NE, as well as neighbors on the LAN, such as the *WaveStar*® CIT.

**Properties**      Login Privilege: User Privilege Code (UCFC/UCAL): S1  
                      Priority: 1  
                      Abortable: Yes.

**Input format**      Command Syntax: RTRV-MAP-NETWORK:*tid:aid:ctag*[::*level2*];

### Input parameters

#### Command parameters

1.    *tid* – Target Identifier  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.  
       Type: TID.
2.    *aid* – Access Identifier  
       This parameter specifies the osinode for which the OSI nodes is retrieved. The value *osinodeall* is not allowed.  
       Type: AID.  
       Range: OSI\_node\_AID. The value *osinodeall* is not allowed.
3.    *ctag* – Correlation Tag  
       Refer to the “RTRV-HDR: Retrieve header” (5-8) command for the input parameter syntax and description of this parameter.  
       Type: CTAG.
4.    *level2* – IS Routing Level  
       If set to N(o), report will list only the nodes in the local level 1 area of this node.  
       If set to Y(es), report will list the nodes in the level 2 sub-domain (when *aid* specifies a level 2 node).  
       Note: For nodes where level 2 routing is not supported, the output will be empty when *level2*=Y.  
       Type: value set.

## RTRV-MAP-NETWORK: Retrieve network

map

Range:

- N (default)
- Y.

**Output format** If the RTRV-MAP-NETWORK request is successful, the following normal completion message is returned:

```

sid date time
M ctag COMPLD
"spec_block"
...
"spec_block"
;
```

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the Output Parameter section of “RTRV-HDR: Retrieve header” (5-8) .

**Output parameters****Spec block parameters**

1. level1 – Level 1 Router  
This parameter specifies whether reachable node is level 1 router.  
Type: value set  
Range:  
  - Y (es)
  - N (o).
2. level2 – Level 2 Router  
This parameter specifies whether reachable node is level 2 router.  
Type: value set  
Range:  
  - Y (es)
  - N (o).
3. net – Network Entity Title  
This field is the Network Entity Title (NET) of one reachable OSI node. The NET is the same as the NSAP with the last byte set to 00 (hex).  
This output parameter is only available when input aid is of type OSI\_node\_AID.  
Type: 20 byte octet string in 40 digit hex representation.

## RTRV-MAP-NETWORK: Retrieve network

map

Range: The NET is composed of the following components:

- l3idp (l3afi and l3idi)
- l3dfi,
- l3org,
- l3res,
- l3rd,
- l3area,
- l3sys,
- l3sel = 00 (hex).

See “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54) for details.

4. tid – Target Identifier

This parameter specifies the TID of the local NE is only reported for entries of the local NE.

Type: TID

Range: Refer to the “RTRV-HDR: Retrieve header” (5-8) command for legal values and a general description of TIDs.

**Detailed behavior description**

The RTRV-MAP-NETWORK command retrieves per node a list of OSI nodes (depending on the input aid), reachable from the local NE via the OSI stack(s). This can include other network elements, other nodes of the local NE, as well as other systems on the LAN, such as the . *WaveStar*® CIT.

In contrast to RTRV-MAP-NEIGHBOR, which retrieve info about physical neighbors and properties of the physical connection, this command shall retrieve info with respect to (I)IS-IS routing.

If the node specified by aid is provisioned as level 2 and level2=Y, the report shall list the level 2 nodes across the level 2 subdomain and the nodes in the local level 1 area of the selected node. The output parameters level1 and level2 contain the correct level 1, 2 indication.

If level2=N, the report shall list only the nodes in the local level 1 area of the selected node (including the default level 2 node and other level 2 nodes in the local level 1 area). The output parameters level1 and level2 are meaningless.

The local OSI system is also listed in the report.

This command does not generate a REPT DBCHG notification.

map

```
RTRV-MAP-NETWORK:LT-UNITE:osinode1:123456;
    LT-UNITE 00-11-01 15:00:00
M 123456 COMPLD
"tid=LT-UNITE,
net=39840F80000000000000000000000000aa00,
level1=Y,level2=Y"
"net=39840F80000000000000000000000000a100,
level1=Y,level2=Y"
"net=39840F80000000000000000000000000a200,
level1=Y,level2=Y"
"net=39840F80000000000000000000000000a500,
level1=Y,level2=Y"
"net=39840F80000000000000000000000000a600,
level1=Y,level2=Y"
"net=39840F80000000000000000000000000a700,
level1=Y,level2=Y"
"net=39840F800000000000000000010000000000a800,
level1=Y,level2=N"
```

Refer to the “RTRV-HDR: Retrieve header” (5-8) command Error responses section. The error responses listed there apply to the RTRV-MAP-NETWORK command.

The osinode parameter for which the network map should be retrieved must be in the created state, i.e. the value must be either osinode1 or the node must be successfully created via ENT-ULSDCC-L3.

**Error code:** SNVS - Status, Not in Valid State, osinode not in created state

- “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)
- “RTRV-ULSDCC-L3: Retrieve layer 3 related parameters” (12-54)
- “RTRV-MAP-NEIGHBOR: Retrieve map neighbor” (12-114)





# 13 Error codes

## Overview

---

**Purpose** The following table lists the error codes.



## List of error codes

---

| Errorcode                                                              | Meaning (validation rule)                           | Related to command ...                                                                                           |
|------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| EATN - Status, incorrect equipage, unrecognized CP for this slot       | check whether CP is acceptable                      | “ENT-EQPT (slot): Enter equipment (slot)” (5-95), “ED-EQPT (slot): Edit equipment (slot)” (5-104)                |
|                                                                        | check exchangeability rules for XC-packs            | “ED-EQPT (slot): Edit equipment (slot)” (5-104)                                                                  |
|                                                                        | check exchangeability rules for optical packs       |                                                                                                                  |
| EATN - Status, incorrect equipage, unrecognized module for this socket | check whether module is acceptable                  | “ENT-EQPT (Socket): Enter equipment” (5-138), “ED-EQPT (Socket): Edit equipment” (5-142)                         |
|                                                                        | check exchangeability rules for optical modules     | “ED-EQPT (Socket): Edit equipment” (5-142)                                                                       |
| ENEQ - Equipage, Not Equipped, insufficient file space                 | insufficient file space                             | “CPY-MEM: Copy memory” (11-20)                                                                                   |
| ENEQ - Equipage, Not Equiped osinode                                   | validation rule for parameter osinode               | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44), “ENT-FECOM: Enter DCC channel related parameters” (12-16) |
| ENSG - Equipage, Not Software Generic, generic not available           | generic not available                               | “APPLY: Apply software generic” (11-42), “CPY-MEM: Copy memory” (11-20)                                          |
| ICNV - Input, Command Not Valid, file must be specified                | directory/URL not specified                         | “CPY-MEM: Copy memory” (11-20)                                                                                   |
| ICNV - Input, Command Not Valid, inmbst not NA                         | correct state of tributary for being added (source) | “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)                                                 |



| Errorcode                                                          | Meaning (validation rule)                         | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ICNV - Input, Command Not Valid, Interface Standard does not match | check CCB against <i>ptype</i> and <i>istd</i>    | “RTRV-STM1E: Retrieve STM1E port” (5-187), “ED-STM1E: Edit STM1E port” (5-279),<br>“RTRV-STM1: Retrieve STM1 port” (5-194), “RTRV-STM4: Retrieve STM4 port” (5-201),<br>“RTRV-STM16: Retrieve STM16 port” (5-209), “RTRV-STM64: Retrieve STM64 port” (5-223),<br>“RTRV-STM256: Retrieve STM256 port” (5-232),<br>“RTRV-OC3: Retrieve OC3 port” (5-238), “RTRV-OC12: Retrieve OC12 port” (5-245),<br>“RTRV-OC48: Retrieve OC48 port” (5-252), “RTRV-OC192: Retrieve OC192 port” (5-261),<br>“RTRV-OC768: Retrieve OC768 port” (5-269), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315),<br>“ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357),<br>“ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418),<br>“ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458),<br>“ED-OC768: Edit OC768 port” (5-479) |
|                                                                    | check CCB against istd                            | “RTRV-VC3: Retrieve VC3 tributary” (5-499)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                    | check CCB against istd of related VCG             | “RTRV-VCGTRIB: Retrieve virtual concatenation group tributary” (7-202)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| ICNV - Input, Command Not Valid, outmbst not NA                    | correct state of tributary for being added (Sink) | “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Errorcode                                                                     | Meaning (validation rule)                                           | Related to command ...                                                       |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------|
| ICNV - Input, Command Not Valid, Protocol Failure in Receive Direction        | LCAS failure of protocol present in sink direction                  | “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)             |
| ICNV - Input, Command Not Valid, Protocol Failure in Transmit Direction       | LCAS failure of protocol present in source direction                |                                                                              |
| ICNV - Input, Command Not Valid, session already established                  | login on established session                                        | “ACT-USER: Activate user” (4-4)                                              |
| IDNC - Input, Data Not Consistent                                             | disabling of superusers                                             | “ED-USER-SECU: Edit user security” (4-39)                                    |
|                                                                               | l4ajsys must be supplied                                            | “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks ” (12-84) |
|                                                                               | Can't enable lanstat when ip_lanstat and osi_lanstat are disabled   | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)                        |
|                                                                               | Can't enable ip_lanstat and/or osi_lanstat when lanstat is disabled |                                                                              |
|                                                                               | Can't assign same IP address to several LANs                        |                                                                              |
| IDNC - Input Data Not Consistent, 2f-BSLR: rate exceeds half of the port rate | rate must not exceed half of the port rate (2f-BSLR only)           | “ENT-CRS: Enter cross-connection” (7-25)                                     |

| Errorcode                                                                                            | Meaning (validation rule)                      | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNC - Input, Data Not Consistent, a new trace value must also be supplied for a trace format change | supply of outgoing J0 trace                    | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479) |
| IDNC - Input, Data, Not Consistent, a new trc must also be supplied for a path trace mode change     | supply of transmitted path trace               | “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)                                                                                                                                                                                                                                                                                                                                            |
| IDNC - Input Data Not Consistent, Bridging rate is not compliant with exisisting leg                 | both legs must have same rate                  | “ENT-CRS: Enter cross-connection” (7-25), “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                                                                                                                                                                              |
| IDNC - Input, Data Not Consistent, Corresponding loca/locz information is missing                    | Corresponding loca/locz information is missing | “ENT-CRS: Enter cross-connection” (7-25)                                                                                                                                                                                                                                                                                                                                                                    |
| IDNC - Input Data Not Consistent, cross-connection-existence not consistent with cmdmde-value        | cmdmde matches cross-connection non-/existence | “OPR-LPBK (here cross-connection loopback)” (7-89)                                                                                                                                                                                                                                                                                                                                                          |
| IDNC - Input, Data, Not Consistent, default profile                                                  | pfname is default                              | “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26)                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                      | deleting the system default profile            | “DLT-TCA-PROF: Delete TCA Profile” (9-119)                                                                                                                                                                                                                                                                                                                                                                  |

| Errorcode                                                                                     | Meaning (validation rule)                                | Related to command ...                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNC-Input, Data, Not Consistent, Default VLAN ID is already assigned for this System         | default VLAN ID is already assigned for this system      | “ED-EPORT: Edit Ethernet port” (7-164)                                                                                                                                                              |
| IDNC-Input, Data, Not Consistent, Default VLAN ID is not an allowed member of valid VLAN list | default VLAN ID is no allowed member of valid VLAN list  |                                                                                                                                                                                                     |
| IDNC - Input Data Not Consistent, in_aid or ppgname needed                                    | in_aid or ppgname existence                              | “RTRV-CRS: Retrieve cross-connection” (7-6)                                                                                                                                                         |
| IDNC - Input Data Not Consistent, inconsistent ASAP parameter                                 | inconsistent severity level                              | “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)                                                                                                                                       |
| IDNC - Input Data Not Consistent, Inconsistent loopback type w.r.t. aid                       | valid loopback type                                      | “OPR-LPBK (here cross-connection loopback)” (7-89)                                                                                                                                                  |
| IDNC - Input Data Not Consistent, modifier is inconsistent with existing interface standard   | modifier consistent with given port's interface standard | “RTRV-LPBK: Retrieve loopback (here facility loopback)” (7-102),<br>“OPR-LPBK: Operate loopback (here facility loopback)” (7-107),<br>“RLS-LPBK: Release loopback (here facility loopback)” (7-114) |
| IDNC - Input Data Not Consistent, modifier is inconsistent with existing port rate            | modifier consistent with given port-rate                 |                                                                                                                                                                                                     |
| IDNC - Input, Data, Not Consistent, MSP 1+1_Optimized is always non-revertive                 | MSP type 1+1_optimized is never revertive                | “ENT-PROTN-GRP: Enter protection group” (8-56),<br>“ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                     |
| IDNC - Input, Data, Not Consistent, MSP 1+1_optimized not supported for SONET mode            | No MSP 1+1 optimized protection for SONET                |                                                                                                                                                                                                     |
| IDNC - Input, Data, Not Consistent, MSP Protection Type 1x1 is always revertive               | MSP type 1:1 is never non-revertive                      |                                                                                                                                                                                                     |

| Errorcode                                                                              | Meaning (validation rule)                             | Related to command ...                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNC - Input Data Not Consistent, new name for default profile                         | rename of default ASAP                                | “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)                                                                                                                                                             |
|                                                                                        | rename default profile name                           | “ED-TCA-PROF: Edit TCA profile” (9-81)                                                                                                                                                                                    |
| IDNC - Input, Data, Not Consistent, no allowed topology conversion                     | Topology conversion command must be consistent        | “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                                      |
| IDNC - Input, Data, Not Consistent, No MSP protection supported for SONET mode         | No MSP 1:1 protection for SONET                       | , “ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                                                                            |
| IDNC - Input Data Not Consistent, not own uid                                          | not the own uid specified                             | “CANC-USER: Cancel user” (4-11)                                                                                                                                                                                           |
| IDNC - Input, Data, Not Consistent, Optimized exists only with 1+1 Protection Type     | only MSP 1+1 can be optimized                         | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                            |
| IDNC - Input, Data Not Consistent, port_aid1 and port_aid2 not different               | different Port AIDs                                   | “ENT-CRS-FECOM: Enter transparent DCC cross-connection” (12-31)                                                                                                                                                           |
| IDNC - Input, Data, Not Consistent, protection mode supported for 4F applications only | TOPEX and SHORTENED applicable with prototype=4F only | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                            |
| IDNC - Input Data Not Consistent, Rate is inconsistent with existing cross-connection  | valid rate                                            | “DLT-CRS: Delete cross-connection” (7-53), “OPR-LPBK (here cross-connection loopback)” (7-89), “RLS-LPBK: Release loopback (here cross-connection loopback)” (7-97), “CNVT-CCT: Convert cross-connection topology” (7-69) |

| Errorcode                                                                                                     | Meaning (validation rule)                                       | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNC - Input, Data, Not Consistent, revertive mode not supported for MSP Protection Type 1+1 unidirectional   | MSP type 1+1 unidirectional and revertive is not supported      | “ENT-PROTN-GRP: Enter protection group” (8-56),<br>“ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                                                                                                                                                                                                                         |
| IDNC - Input Data Not Consistent, Specified Tributary does not support the indicated rate                     | rate consistency for VCG tributaries                            | “ENT-CRS: Enter cross-connection” (7-25)                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                               | tributary provisioning and rate consistency                     | “ENT-CRS: Enter cross-connection” (7-25),<br>“OPR-LPBK (here cross-connection loopback)” (7-89)                                                                                                                                                                                                                                                                                                                         |
| IDNC - Input, Data, Not Consistent, Specified new Tributary does not support the indicated rate               | New Tributary rate validity                                     | “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                                                                                                                                                                                                                                    |
| IDNC - Input, Data, Not Consistent, strcout length must match the given outgoing J0 trace mode.               | transmitted path trace length                                   | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315),<br>“ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357),<br>“ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418),<br>“ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458),<br>“ED-OC768: Edit OC768 port” (5-479) |
| IDNC - Input, Data, Not Consistent, This MSP protection type not supported for a port with the indicated rate | No MSP 1:1 protection for bitrate STM-256                       | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                                                               | No MSP 1+1 bidirectional and non-revertive on other than STM-64 | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                                                                                                                                                                                                                          |

| Errorcode                                                                                    | Meaning (validation rule)                                   | Related to command ...                                                                            |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| IDNC - Input, Data, Not Consistent, TOP supported only for 4F applications only              | TOP applicable with prototype=4F only                       | “ED-PROTN-GRP: Edit protection group” (8-80)                                                      |
| IDNC - Input, Data, Not Consistent, trc length must match the given path trace mode          | transmitted path trace length                               | “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219)                                  |
| IDNC - Input Data Not Consistent, Tributary boundary is inconsistent with the indicated rate | AID boundary and rate consistency                           | “ENT-CRS: Enter cross-connection” (7-25),<br>“OPR-LPBK (here cross-connection loopback)” (7-89),  |
| IDNC - Input Data Not Consistent, tributary occupation not consistent with portcontrol value | portcontrol matches tributary occupied by NN                | “OPR-LPBK (here cross-connection loopback)” (7-89)                                                |
| IDNC - Input, Data Not Consistent, value change not allowed for profile Default0             | Value change of default profile Default0                    | “ED-TCA-PROF: Edit TCA profile” (9-81)                                                            |
| IDNC - Input Data Not Consistent, VGC-trib as input-trib in path-protected cross-connection  | no VCG-trib as in_aid (for path-protected cross-connection) | “ENT-CRS: Enter cross-connection” (7-25),<br>“CNVT-CCT: Convert cross-connection topology” (7-69) |
| IDNV - Input, Data Not Valid                                                                 | input parameters not specified                              | “CPY-MEM: Copy memory” (11-20)                                                                    |
|                                                                                              | invalid uid/or pid                                          | “ACT-USER: Activate user” (4-4)                                                                   |
|                                                                                              | disabled user ID                                            |                                                                                                   |
|                                                                                              | expired password and unsuccessful change of password        |                                                                                                   |
|                                                                                              | presence of spec_block parameter                            | “ED-CRS: Edit Cross-connection” (7-46)                                                            |

| Errorcode                                                                                      | Meaning (validation rule)                                        | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, additional parameter required                                    | additional parameters required when setting <i>ndetmd</i> to MAN | “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357),                                                                                                                                                                                                                                                             |
| IDNV - Input, Data Not Valid, additional parameters neighborNodeID and neighborPortID required |                                                                  | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479) |
| IDNV - Input, Data Not Valid, AIS mode not valid                                               | output type not supported for AIS mode                           | “SET-SYCN: Set synchronization” (10-19)                                                                                                                                                                                                                                                                                                                                                                     |



| Errorcode                                                 | Meaning (validation rule)        | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, ASAP profile does not exist | check for ASAP profile existence | “ED-EQPT (shelf): Edit equipment (shelf)” (5-84), “ED-EQPT (slot): Edit equipment (slot)” (5-104), “ED-EQPT (Socket): Edit equipment” (5-142) (                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                           | pfname does not exist            | “SET-ATTR-ENV: Set attribute environment” (6-68)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                           | validate ASAP profile            | “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                           | ASAP profile exists              | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479), “ED-VC3: Edit VC3 tributary” (5-515), “ED-ST51: Edit ST51 tributary” (5-521), “ED-EPORT: Edit Ethernet port” (7-164), “ED-VCG: Edit virtual concatenation group” (7-189), “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219) |

| Errorcode                                                                                                                          | Meaning (validation rule)                             | Related to command ...                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, Assigned bandwidth exceeds half port's bandwidth                                                     | enough bandwidth reserved for 2F protection group     | “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479) |
| IDNV - Input, Data Not Valid. Attempting to delete an administrator login. Two administrator user logins are required at all times | attempt to delete administrator's uid                 | “DLT-USER-SECU: Delete user security” (4-54)                                                                                                                                                                                 |
| IDNV - Input Data Not Valid, Both input tributaries are identical                                                                  | path-protected cross-connection has unique input AIDs | “ENT-CRS: Enter cross-connection” (7-25), “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                               |
| IDNV - Input, Data Not Valid, cable equalization not supported                                                                     | cable equalization not supported                      | “SET-SYNCN: Set synchronization” (10-19)                                                                                                                                                                                     |
| IDNV - Input Data not Valid, can't change l3domain for osinode1                                                                    | l3domain can not be changed for osinode1              | “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)                                                                                                                                                   |
| IDNV - Input Data not Valid, constraint l3radesnode                                                                                | l3radesnode value and l3isisnl Value                  | “ENT-ULSDCC-L3: Create a further OSI node” (12-60), “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)                                                                                               |
| IDNV - Input, Data Not Valid, profile name does not exist                                                                          | profile name does not exist                           | “ED-TCA-PROF: Edit TCA profile” (9-81), “DLT-TCA-PROF: Delete TCA Profile” (9-119)                                                                                                                                           |

| Errorcode                                                                                                   | Meaning (validation rule)                                         | Related to command ...                                                                                                            |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, profile name does not exist                                                   | profile name does not exist                                       | “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25)                                                                                      |
| IDNV - Input, Data Not Valid, profile type does not exist                                                   | profile type does not exist                                       |                                                                                                                                   |
| IDNV - Input, Data Not Valid, default profiles cannot be deleted                                            | deleting the system default profile                               | “DLT-TCA-PROF: Delete TCA Profile” (9-119)                                                                                        |
| IDNV - Input, Data Not Valid, discrepancy between entered values and current value of spec-block parameters | ohbyte and intfctype values correct (when dis-associating)        | “SET-OW: Set Orderwire and User Bytes” (7-124)                                                                                    |
| IDNV - Input, Data Not Valid, duplicate IP Map entry.                                                       | Check for duplicate entries                                       | “ENT-IP-MAP: Enter TCP/IP map” (12-106)                                                                                           |
| IDNV - Input, Data Not Valid, duplicate UID                                                                 | entering user’s own or existing uid                               | “ENT-USER-SECU: Enter user security” (4-32)                                                                                       |
|                                                                                                             | newuid has the same value of an existing uid                      | “ED-USER-SECU: Edit user security” (4-39)                                                                                         |
| IDNV - Input, Data Not Valid, E and F tributaries not cross-connected                                       | E tributary and F tributary not cross-connected                   | “CONN-TACC: Connect test access” (7-241)                                                                                          |
| IDNV - Input Data not Valid, equal l3domain                                                                 | l3domain value must be different for current node and l3radesnode | “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)                                                        |
| IDNV - Input Data not Valid, equal node IDs                                                                 | l3radesnode value must be different from osinode                  | “ENT-ULSDCC-L3: Create a further OSI node” (12-60),<br>“ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67) |
| IDNV - Input, Data Not Valid, forced DUS not supported for this format                                      | format not supported for forced DNU/DUS                           | “SET-SYCN: Set synchronization” (10-19)                                                                                           |

| Errorcode                                                                             | Meaning (validation rule)                              | Related to command ...                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, incompatible <i>screen</i> , <i>uidclass</i> parameters | compatibility screen, uidclass parameter               | “ENT-USER-SECU: Enter user security” (4-32)                                                                                                                                                                                                                       |
| IDNV - Input, Data Not Valid, incomplete switch command                               | complete switch command                                | “OPR-PROTNSW: Operate protection switch” (8-109)                                                                                                                                                                                                                  |
| IDNV - Input, Data Not Valid, inconsistent <i>aid</i> and <i>monlev</i>               | aid range and monlev                                   | “RTRV-PM: Retrieve performance monitoring” (9-7),                                                                                                                                                                                                                 |
| IDNV - Input, Data Not Valid, inconsistent aid and prototype                          | consistent aid and prototype                           | “RTRV-PROTN-GRP: Retrieve protection group” (8-13),<br>“OPR-PROTNSW: Operate protection switch” (8-109),<br>“RLS-PROTNSW: Release protection switch” (8-125)                                                                                                      |
| IDNV - Input, Data Not Valid, inconsistent aid and rid                                | consistent aid and rid                                 | “RTRV-PROTN-GRP: Retrieve protection group” (8-13),<br>“OPR-PROTNSW: Operate protection switch” (8-109),<br>“RLS-PROTNSW: Release protection switch” (8-125),<br>“ED-PROTN-GRP: Edit protection group” (8-80),<br>“DLT-PROTN-GRP: Delete protection group” (8-97) |
| IDNV - Input Data not Valid, inconsistency l3domain with l3radesnode                  | consistency l3domain with l3radesnode for nodes 2 to 8 | “ENT-ULSDCC-L3: Create a further OSI node” (12-60),<br>“ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)                                                                                                                                 |
| IDNV - Input, Data Not Valid, incorrect date/time format                              | incorrect date/time format                             | “ED-DAT: Edit date and time” (5-65)                                                                                                                                                                                                                               |
| IDNV - Input, Data Not Valid, incorrect new_pid                                       | missing or invalid or syntactically incorrect new_pid  | “ED-PID: Edit password identifier” (4-49)                                                                                                                                                                                                                         |

| Errorcode                                                                             | Meaning (validation rule)                                                                   | Related to command ...                                                                                                                   |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, Interface type not settable for specified UserByte-Port | interface type compliant with port                                                          | “SET-OW: Set Orderwire and User Bytes” (7-124)                                                                                           |
| IDNV - Input Data Not Valid, invalid <i>atagseq</i>                                   | valid atagseq                                                                               | “RTRV-AO: Retrieve Autonomous Output” (5-54)                                                                                             |
| IDNV - Input Data Not Valid, Invalid loopback for EPort                               | for GE (EPort) only far-side loopback allowed                                               | “OPR-LPBK: Operate loopback (here facility loopback)” (7-107)                                                                            |
| IDNV - Input, Data Not Valid, invalid profile type or name                            | invalid profile type or name                                                                | “ENT-TCA-PROF: Enter TCA Profile” (9-60), “ED-TCA-PROF: Edit TCA profile” (9-81), “DLT-TCA-PROF: Delete TCA Profile” (9-119)             |
| IDNV - Input, Data Not Valid, invalid sc                                              | invalid switch command                                                                      | “OPR-SYNCNSW: Operate synchronization switch ” (10-31)                                                                                   |
| IDNV - Input, Data Not Valid, invalid switch command                                  | supported switch command                                                                    | “OPR-PROTNSW: Operate protection switch” (8-109)                                                                                         |
| IDNV - Input, Data Not Valid, invalid test access mode                                | MONF or MONEF test access mode not allowed on a 1WAY cross-connection from E to F tributary | “CONN-TACC: Connect test access” (7-241)                                                                                                 |
| IDNV - Input, Data Not Valid, invalid UID                                             | invalid uid                                                                                 | “ED-USER-SECU: Edit user security” (4-39), “DLT-USER-SECU: Delete user security” (4-54), “RTRV-USER-SECU: Retrieve user security” (4-24) |
| IDNV - Input, Data Not Valid, invalid UPC                                             | invalid upc                                                                                 | “ED-USER-SECU: Edit user security” (4-39), “ENT-USER-SECU: Enter user security” (4-32)                                                   |
| IDNV - Input Data not Valid, l3prefix and l3radesnode inconsistent                    | consistency of l3radesnode with l3raprefix                                                  | “ENT-ULSDCC-L3: Create a further OSI node” (12-60), “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)           |

| Errorcode                                                                    | Meaning (validation rule)                           | Related to command ...                                                                                                            |
|------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, l4ajsys/osinode not unique                     | l4ajsys per osinode must be different               | “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks ” (12-84)                                                      |
| IDNV - Input, Data Not Valid, missing F tributary                            | Missing F tributary                                 | “CONN-TACC: Connect test access” (7-241)                                                                                          |
| IDNV - Input, Data Not Valid, newuid for non superuser                       | newuid defined for non superuser uid                | “ED-USER-SECU: Edit user security” (4-39)                                                                                         |
| IDNV - Input, Data Not Valid, no aid range in combination with rid           | aid range and rid                                   | “RTRV-PROTN-GRP: Retrieve protection group” (8-13)                                                                                |
| IDNV - Input, Data Not Valid, no regen loop with SETG as timing output       | regenerator loops with SETG as timing output        | “SET-SYNCN: Set synchronization” (10-19)                                                                                          |
| IDNV - Input Data not Valid, NSAP Area Address matches with RA-Prefix        | Address Area Value – RA-Prefix Value                | “ENT-ULSDCC-L3: Create a further OSI node” (12-60),<br>“ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67) |
| IDNV - Input Data not Valid, only a single node in separate domain supported | only one single node in a separate domain supported | “ENT-ULSDCC-L3: Create a further OSI node” (12-60),<br>“ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67) |
| IDNV - Input Data not Valid, osinode cannot be changed for LAN1              | only osinode1 for LAN 1                             | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)                                                                             |
| IDNV - Input RA-Prefix matches with the NSAP Area Address                    | RA-Prefix Value – Address Area Value                | “ENT-ULSDCC-L3: Create a further OSI node” (12-60),<br>“ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67) |
| IDNV - Input, Data Not Valid, parameter not required                         | parameter not supported for modifier                | “OPR-SYNCNSW: Operate synchronization switch ” (10-31)                                                                            |

| Errorcode                                                                       | Meaning (validation rule)                                                 | Related to command ...                                                                                                                                |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, Parameter not supported                           | change of FEC parameters only if supported by the current circuit pack    | “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380) , “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479) |
|                                                                                 | enabling of optical channel only if supported by the current circuit pack |                                                                                                                                                       |
| IDNV - Input Data Not Valid, Parameter(s) out of allowed value range            | all parameter are specified with allowed values                           | “ENT-CRS: Enter cross-connection” (7-25)                                                                                                              |
| IDNV - Input Data Not Valid, Parameter(s) present which are not allowed         | only those parameter present which are needed                             |                                                                                                                                                       |
| IDNV - Input, Data Not Valid, profile name already exists for the type          | profile name already exists                                               | “ED-TCA-PROF: Edit TCA profile” (9-81)                                                                                                                |
| IDNV - Input, Data Not Valid, profile name already exists for this profile type | TCA profile already exist                                                 | “ENT-TCA-PROF: Enter TCA Profile” (9-60)                                                                                                              |
| IDNV - Input, Data Not Valid, profile name does not exist                       | profile name does not exist                                               | “DLT-TCA-PROF: Delete TCA Profile” (9-119)                                                                                                            |
| IDNV - Input, Data Not Valid, profile name does not exist                       | profile name does not exist                                               | “RTRV-TCA-PROF: Retrieve TCA Profile” (9-25)                                                                                                          |
| IDNV - Input, Data Not Valid, profile type does not exist                       | profile type does not exist                                               | “ENT-TCA-PROF: Enter TCA Profile” (9-60)                                                                                                              |
| IDNV - Input, Data Not Valid, provisioning of lapdmode and lapdrl not possible  | invalid input parameters                                                  | “ENT-FECOM: Enter DCC channel related parameters” (12-16)                                                                                             |
| IDNV - Input, Data Not Valid, rid is already used by another protection group   | unique rid                                                                | “ENT-PROTN-GRP: Enter protection group” (8-56), “ED-PROTN-GRP: Edit protection group” (8-80)                                                          |

| Errorcode                                                                        | Meaning (validation rule)                               | Related to command ...                             |
|----------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------|
| IDNV - Input, Data Not Valid, Sa bit location not supported                      | input / output format not supported for Sa bit settings | “SET-SYNCN: Set synchronization” (10-19)           |
| IDNV - Input, Data Not Valid, screen value was not set by security administrator | screen value not allowed for uid                        | “ED-USER: Edit user” (4-46)                        |
| IDNV - Input, Data Not Valid, side information is not complete                   | complete side information                               | “ENT-PROTN-GRP: Enter protection group” (8-56)     |
| IDNV - Input, Data Not Valid, sid is already used by another BLSR/MS-SPRing Node | uniqueness of TID within ringmaps                       | “SET-SID: Set SID” (5-69)                          |
| IDNV - Input, Data Not Valid, side information is not complete                   | complete side information                               | “ENT-PROTN-GRP: Enter protection group” (8-56)     |
| IDNV - Input, Data Not Valid, Slot still provisioned                             | slot must not be provisioned                            | “ENT-EQPT (slot): Enter equipment (slot)” (5-95)   |
| IDNV - Input, Data Not Valid, Socket still provisioned                           | socket must not be provisioned                          | “ENT-EQPT (Socket): Enter equipment” (5-138)       |
| IDNV - Input, Data Not Valid, SSM not supported for provisioned QL               | SSM not supported if timing port provisioned AUTO       | “SET-SYNCN: Set synchronization” (10-19)           |
| IDNV - Input, Data Not Valid, SSM not supported for this format                  | SSM not supported                                       |                                                    |
| IDNV - Input, Data Not Valid, switch capacity cannot be decreased                | Validation rule: No decrease of maximum switch capacity | “ED-EQPT (system): Edit equipment (system)” (5-49) |



| Errorcode                                                                  | Meaning (validation rule)                                                                            | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IDNV - Input, Data Not Valid, TCA profile does not exist                   | TCA profile exists                                                                                   | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479), “ED-VC3: Edit VC3 tributary” (5-515), “ED-STS1: Edit STS1 tributary” (5-521), “ED-EPORT: Edit Ethernet port” (7-164), “ED-VCG: Edit virtual concatenation group” (7-189), “ED-STM1E: Edit STM1E port” (5-279), “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219) |
| IDNV - Input, Data Not Valid, tributary already part of a cross-connection | <i>loca</i> , <i>locz</i> changes only allowed when tributary already involved in a cross-connection | “ED-VC3: Edit VC3 tributary” (5-515), “ED-STS1: Edit STS1 tributary” (5-521)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| IDNV - Input, Data Not Valid, uid must not be the own uid                  | uid must not be the own uid                                                                          | “CANC-USER-SECU: Cancel user security” (4-13)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| IDNV - Input, Data Not Valid, uid not in NE data base                      | uid not in NE data base                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| IDNV - Input, Data Not Valid, wrong old_pid                                | invalid old_pid                                                                                      | “ED-PID: Edit password identifier” (4-49)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Errorcode                                                                      | Meaning (validation rule)                     | Related to command ...                                                                                  |
|--------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------|
| IDRG - Input Data Range Error, <i>osinode</i>                                  | TARP origination only valid for node-1        | “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks ” (12-84)                            |
|                                                                                | TARP responder only valid for node-1          |                                                                                                         |
| IDRG - Input, Data Range Error, threshold value is out of range                | IDRG-range error                              | “ED-TCA-PROF: Edit TCA profile” (9-81)                                                                  |
| IEAE - Input, Entity Already Exists, duplicate profile name                    | duplicate pfname                              | “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)                                         |
|                                                                                | duplicate newname                             | “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)                                           |
|                                                                                | profile name already exists                   | “ENT-TCA-PROF: Enter TCA Profile” (9-60), “ED-TCA-PROF: Edit TCA profile” (9-81)                        |
| IEAE - Input, Entity Already Exists, cross-connection exists on test tributary | Cross-connection exists on the test tributary | “CONN-TACC: Connect test access” (7-241)                                                                |
| IEAE - Input, Entity Data Already Exists, <i>osinode</i>                       | OSI node is already created                   | “ENT-ULSDCC-L3: Create a further OSI node” (12-60)                                                      |
| IEAE - Input, Entity Already Exists, test access connection exists             | Test tributary already connected              | “CONN-TACC: Connect test access” (7-241)                                                                |
| IENE - Input, Entity Not Exists                                                | reject request for protection CTL slot        | “ENT-EQPT (slot): Enter equipment (slot)” (5-95), “DLT-EQPT (slot): Delete equipment (slot)” (5-112), , |
|                                                                                | directory not accessible                      | “CPY-MEM: Copy memory” (11-20)                                                                          |
| IENE - Input, Entity Not Exists, cannot change system default profile          | Changing default profile name                 | “ED-TCA-PROF: Edit TCA profile” (9-81)                                                                  |
| IENE - Input, Entity Not Exist, profile does not exist                         | no matching profile name                      | “RTRV-ASAP-ASGNMT: Retrieve ASAP assignment” (6-14)                                                     |

| Errorcode                                                                                 | Meaning (validation rule)                               | Related to command ...                                                                                                                                                              |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IENE - Input, Entity Not Exists, Specified association does not exist                     | association present (when dis-associating)              | “SET-OW: Set Orderwire and User Bytes” (7-124)                                                                                                                                      |
| IENE - Input Entity Not Exists, Specified cross-connection does not exist                 | entity (cross-connection) must exist                    | , “ED-CRS: Edit Cross-connection” (7-46), “DLT-CRS: Delete cross-connection” (7-53), “CNVT-CCT: Convert cross-connection topology” (7-69)                                           |
| IENE - Input, Entity Not Exists, Specified port does not exist                            | Port exists (when associating)                          | “SET-OW: Set Orderwire and User Bytes” (7-124)                                                                                                                                      |
| IENE - Input Entity Not Exists, Specified Transparent DCC Cross Connection does not exist | entity (transparent DCC cross-connection) must exist    | “DLT-CRS-FECOM: Delete transparent DCC cross-connection” (12-35)                                                                                                                    |
| IENE - Input Entity Not Exists, Specified tributary/tributaries do not exist              | entities must exist                                     | “ENT-CRS: Enter cross-connection” (7-25)                                                                                                                                            |
|                                                                                           | entities (tributaries) must exist                       | , “ED-CRS: Edit Cross-connection” (7-46), “DLT-CRS: Delete cross-connection” (7-53), “CNVT-CCT: Convert cross-connection topology” (7-69), “CONN-TACC: Connect test access” (7-241) |
| INUP - Input, Non-null Unimplemented Parameter, secondary test tributary not allowed      | Secondary test tributary not needed for MONE test modes | “CONN-TACC: Connect test access” (7-241)                                                                                                                                            |
| IPMS -Input, Parameter Missing                                                            | pathprotected crossconnection: parameters missing       | “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                |

| Errorcode                                                                                    | Meaning (validation rule)                                | Related to command ...                                                                                                         |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| IPNC - Input Parameter Not Consistent, Rate inconsistent with cross-connection rate          | specified rate consistent with the cross-connection rate | , “ED-CRS: Edit Cross-connection” (7-46)                                                                                       |
|                                                                                              | Inconsistent tributary rate                              | “CONN-TACC: Connect test access” (7-241), “CHG-ACCMD: Change access mode” (7-249), “DISC-TACC: Disconnect test access” (7-253) |
| IPNC - Input Parameter Not Consistent, TID not compliant with cross-connection configuration | TID validation                                           | “ED-CRS: Edit Cross-connection” (7-46)                                                                                         |
| PICC - Privilege, Illegal Command Code, invalid user class                                   | user class                                               | “RTRV-AO: Retrieve Autonomous Output” (5-54)                                                                                   |
| SAOP - Status already operated, loopback already exists                                      | loopback must not already exist                          | “OPR-LPBK (here cross-connection loopback)” (7-89)“OPR-LPBK: Operate loopback (here facility loopback)” (7-107)                |
| SARB - Status, All Resources Busy                                                            | maximum logins exceeded                                  | “ACT-USER: Activate user” (4-4)                                                                                                |
|                                                                                              | temporary exhaustion of resources                        | “CPY-MEM: Copy memory” (11-20)                                                                                                 |
|                                                                                              | APPLY already in progress                                | “APPLY: Apply software generic” (11-42)                                                                                        |
| SARB - Status, All Resources Busy, system limit exceeded                                     | temporary system exhaustion                              | “APPLY: Apply software generic” (11-42)                                                                                        |
| SDNC - Status, Data Not Consistent                                                           | file inappropriate                                       | “APPLY: Apply software generic” (11-42)                                                                                        |
|                                                                                              | source product type does not match network product type  | “CPY-MEM: Copy memory” (11-20)                                                                                                 |
|                                                                                              | additional directory/URL specified                       |                                                                                                                                |

| Errorcode                                                                                             | Meaning (validation rule)                            | Related to command ...                                                                                                          |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| SDNC - Status, Data Not Consistent, asgncond not empty                                                | probable cause assigned to MDO port                  | “OPR-EXT-CONT: Operate External Control” (6-90), “RLS-EXT-CONT: Release external control” (6-93)                                |
| SDNC - Status, Data Not Consistent, invalid ASAP parameter                                            | ASAP parameter does not exist                        | “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20)                                                                   |
| SDNC - Status, Data not consistent, invalid file or directory                                         | invalid file or directory name                       | “CPY-MEM: Copy memory” (11-20)                                                                                                  |
| SDNC - Status, Data Not Consistent, invalid instance of profile                                       | pfname does not exist                                | “ED-ASAP-PROF: Edit alarm severity assignment profile” (6-20), “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26) |
| SDNC - Status, Data Not Consistent, other port already assigned                                       | one timing port for a circuit pack                   | “SET-SYCN: Set synchronization” (10-19)                                                                                         |
| SDNC - Status, Data Not Consistent, pgid is already used by another protection group of the same type | unique pgid                                          | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                  |
| SDNC - Status, Data Not Consistent, port already assigned                                             | port is already assigned to another timing reference | “SET-SYCN: Set synchronization” (10-19)                                                                                         |
| SDNC - Status, Data Not Consistent, port is out-of-service                                            | no out-of-service state for timing port              |                                                                                                                                 |
|                                                                                                       | for service condition                                | “ENT-FECOM: Enter DCC channel related parameters” (12-16)                                                                       |
| SDNC - Status, Data Not Consistent, profile in use                                                    | ASAP in use                                          | “DLT-ASAP-PROF: Delete alarm severity assignment profile” (6-26)                                                                |

| Errorcode                                                                                                   | Meaning (validation rule)                                     | Related to command ...                                                                   |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------|
| SDNC - Status, Data Not Consistent, quality evaluation disabled                                             | command rejection if quality evaluation disabled              | “SET-SYNCN: Set synchronization” (10-19)                                                 |
| SDNC - Status, Data Not Consistent, reference already assigned                                              | timing reference already assigned                             |                                                                                          |
| SDNC - Status, Data Not Consistent, reference in protection group                                           | timing reference from a protection port in a protection group |                                                                                          |
| SLEM - Status, List Exceeds Maximum UIDs                                                                    | maximum number of uids reached                                | “ENT-USER-SECU: Enter user security” (4-32)                                              |
| SNVS - Status, Not in Valid State                                                                           | automatic ring discovery to be disabled                       | “SET-MAP-RING: Set map ring” (8-168), “ED-FETID: Edit Far End Target Identifier” (8-171) |
|                                                                                                             | deemed source file                                            | “CPY-MEM: Copy memory” (11-20)                                                           |
|                                                                                                             | second APPLY on same software                                 | “APPLY: Apply software generic” (11-42)                                                  |
|                                                                                                             | validation rule for enabled DCC channels                      | “ENT-FECOM: Enter DCC channel related parameters” (12-16)                                |
| SNVS - Status, Not in Valid State, Active Repeater Mode for this Port does not allow dftvlan to be modified | default VLAN ID not allowed in Repeater Mode                  | “ED-EPORT: Edit Ethernet port” (7-164)                                                   |
| SNVS - Status, Not in Valid State, Active Repeater Mode for this Port does not allow vvidls to be modified  | VLAN filtering database not allowed in Repeater Mode          |                                                                                          |
| SNVS - Status, Not in Valid State, Assigned Node not allowed for IP                                         | only osinode1 supports IP                                     | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)                                    |
| SNVS - Status, Not in Valid State, association already exists                                               | no association present (when associating)                     | “SET-OW: Set Orderwire and User Bytes” (7-124)                                           |

| Errorcode                                                              | Meaning (validation rule)                              | Related to command ...                                                                                                                                                                |
|------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, a loopback is existing              | no loopbacks for istd change                           | “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380) |
|                                                                        | no loopbacks for interface standard change             | “ED-VCG: Edit virtual concatenation group” (7-189)                                                                                                                                    |
|                                                                        | no loopbacks for <i>istd</i> , <i>trbmd</i> change     | “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479)       |
| SNVS - Status, Not in Valid State, a protection group is existing      | no protection for istd change                          | “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380) |
|                                                                        | no protection groups allowed                           | “DLT-EQPT (slot): Delete equipment (slot)” (5-112)                                                                                                                                    |
| SNVS - Status, Not in Valid State, a protection group is existing      | no protection for <i>istd</i> , <i>trbmd</i> change    | “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479)       |
|                                                                        |                                                        |                                                                                                                                                                                       |
|                                                                        |                                                        |                                                                                                                                                                                       |
| SNVS - Status, Not in Valid State, a path protection group is existing | no path protection for <i>trbmd</i> change to ADAPTIVE |                                                                                                                                                                                       |

| Errorcode                                                                                               | Meaning (validation rule)                                    | Related to command ...                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, at least one port used as timing reference                           | not used as timing reference                                 | “DLT-EQPT (slot): Delete equipment (slot)” (5-112), “DLT-EQPT (Socket): Delete equipment” (5-151)                                                                                                                   |
| SNVS - Status, Not in Valid State, at least one port of the protection pack is used as timing reference |                                                              | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                      |
| SNVS - Status, Not in Valid State, a test access session exists                                         | no test access session for <i>istd</i> , <i>trbmd</i> change | “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458) “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479) |
| SNVS - Status, Not in Valid State, automatic ring discovery enabled                                     | asymmetric ring only with manual ring provisioning           | “ENT-PROTN-GRP: Enter protection group” (8-56), “ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                        |
| SNVS - Status, Not in Valid State, cannot disable IP on all LAN ports while T-TD or FTDD is enabled     | IP disabling while T-TD or FTDD is enabled                   | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)                                                                                                                                                               |
| SNVS - Status, Not in Valid State, circuit packs not provisioned                                        | Circuit Pack not provisioned                                 | “CONN-TACC: Connect test access” (7-241)                                                                                                                                                                            |
| SNVS - Status, Not in Valid State, clear request impossible                                             | clear wait to restore timer not applicable                   | “OPR-SYNCNSW: Operate synchronization switch ” (10-31)                                                                                                                                                              |
| SNVS - Status, Not in Valid State, clock of destination XC is in warming-up state                       | clock not in warming-up status (Switching Protection Group)  | “OPR-PROTNSW: Operate protection switch” (8-109)                                                                                                                                                                    |



| Errorcode                                                                                                                           | Meaning (validation rule)                                  | Related to command ...                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, Command refers to protection tributaries of a BLSR/MS-SPRing protection and no TOPEX application | BLSR/MS-SPRing protection access (Extra Traffic)           | “ENT-CRS: Enter cross-connection” (7-25), “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                        |
| SNVS - Status, Not in Valid State, connection to OW port exists                                                                     | not used for OW                                            | “DLT-EQPT (slot): Delete equipment (slot)” (5-112), “DLT-EQPT (Socket): Delete equipment” (5-151) (                                                                                   |
| SNVS - Status, Not in Valid State, connection to OW port of the protection pack exists                                              |                                                            | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                        |
| SNVS - Status, Not in Valid State, cross-connections are still existing                                                             | no cross-connection allowed                                | “DLT-EQPT (slot): Delete equipment (slot)” (5-112), “DLT-EQPT (Socket): Delete equipment” (5-151) (                                                                                   |
|                                                                                                                                     | no cross-connections for <i>istd</i> change                | “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380) |
|                                                                                                                                     | no cross-connections for <i>istd</i> , <i>trbmd</i> change | “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479)       |
|                                                                                                                                     | cross-connection - interface standard change               | “ED-VCG: Edit virtual concatenation group” (7-189)                                                                                                                                    |

| Errorcode                                                                               | Meaning (validation rule)                           | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, DCC channels are active for this port                | <i>servcond</i> must be enabled when DCC enabled    | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479) |
| SNVS - Status, Not in Valid State, DCC channel already enabled                          | DCC channels enabled                                | “ENT-CRS-FECOM: Enter transparent DCC cross-connection” (12-31)                                                                                                                                                                                                                                                                                                                                             |
| SNVS - Status, Not in Valid State, DCC channel occupied by MSP/APS DCC protection       | DCC protection                                      |                                                                                                                                                                                                                                                                                                                                                                                                             |
| SNVS - Status, Not in Valid State, DCC channel used in transparent DCC cross connection | Transparent DCC for DCC Line/MS Protection Mode     | “ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                         | Transparent DCC for DCC Sect/RS Protection Mode     |                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                         | Transparent DCC cross-connection                    | “ENT-FECOM: Enter DCC channel related parameters” (12-16)                                                                                                                                                                                                                                                                                                                                                   |
| SNVS - Not in Valid State, DCC/LAN channels assigned                                    | reject deletion when node is assigned to LAN or DCC | “DLT-ULSDCC-L3: Delete a node ID other than node-1” (12-74)                                                                                                                                                                                                                                                                                                                                                 |
| SNVS - Status, Not in Valid State, dcc protection side carries traffic                  | dcc protection: protection side is activ            | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                                                                                                                                                                                                              |

| Errorcode                                                                                | Meaning (validation rule)                                                           | Related to command ...                                                                                 |
|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| SNVS - Not in Valid State, DCC needed for BLSR/MS-SPRING                                 | for 2/4 fiber BLSR/MS-SPRING                                                        | “ENT-FECOM: Enter DCC channel related parameters” (12-16)                                              |
| SNVS - Not in Valid State, DCC protection available                                      | DCC Protection                                                                      | “ENT-FECOM: Enter DCC channel related parameters” (12-16)                                              |
| SNVS - Status, Not in Valid State, default router LAN port not configured                | check for correct configured Default Router LAN Port                                | “ENT-ULS: Enter upper layer stack” (12-98)                                                             |
| SNVS - Status, Not in Valid State, Different interface standards for input tributaries   | path-protected cross-connection has inputs from ports with same interface standards | “ENT-CRS: Enter cross-connection” (7-25),<br>“CNVT-CCT: Convert cross-connection topology” (7-69)      |
| SNVS - Status, Not in Valid State, extra traffic cross-connections are still existing    | No cross-connections allowed when leaving TOPEX                                     | “ED-PROTN-GRP: Edit protection group” (8-80),<br>“DLT-PROTN-GRP: Delete protection group” (8-97)       |
| SNVS Status, Not in Valid State, facility loopbacks still exist                          | no facility loopbacks allowed                                                       | “DLT-EQPT (slot): Delete equipment (slot)” (5-112),<br>“DLT-EQPT (Socket): Delete equipment” (5-151) ( |
| SNVS - Status, Not in Valid State, facility loopbacks still exist at the protection pack |                                                                                     | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                         |

| Errorcode                                                                    | Meaning (validation rule)                              | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, Facility Loopback is active for this port | <i>servcond</i> must be disabled for facility loopback | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479), “ED-EPORT: Edit Ethernet port” (7-164) |
| SNVS - Status, Not in Valid State, incompatibility istddflt and trbmddflt    | compatibility istddflt and trbmddflt                   | “ED-EQPT (system): Edit equipment (system)” (5-49)                                                                                                                                                                                                                                                                                                                                                                                                  |
| SNVS - Status, Not in Valid State, incomplete IP configuration               | check for correct IP configuration                     | “ED-NE: Edit NE” (12-8), “ENT-IP-MAP: Enter TCP/IP map” (12-106), “ENT-ULS: Enter upper layer stack” (12-98)                                                                                                                                                                                                                                                                                                                                        |

| Errorcode                                                                                     | Meaning (validation rule)                                 | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, inconsistent input signal                                  | inputsig consistent with existing cross-connections       | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479), “ED-VCG: Edit virtual concatenation group” (7-189) |
| SNVS - Status, Not in Valid State, inconsistent output signal                                 | unequiposig consistent with existing cross-connections    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SNVS - Status, Not in Valid State, input port(s)for pathprot. crossconnecton in adaptive mode | pathprotected cross-connection: both inputs in fixed-mode | “ENT-CRS: Enter cross-connection” (7-25), “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                                                                                                                                                                                                                                  |
| SNVS - Status, Not in Valid State, invalid IP configuration                                   | check IP configuration                                    | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)                                                                                                                                                                                                                                                                                                                                                                                                           |
| SNVS - Status, Not in Valid State, invalid test access mode                                   | Invalid test access mode change request                   | “CHG-ACCMD: Change access mode” (7-249)                                                                                                                                                                                                                                                                                                                                                                                                                         |
| SNVS - Status, Not in Valid State, Invalid topology                                           | valid topology                                            | “DLT-CRS: Delete cross-connection” (7-53)                                                                                                                                                                                                                                                                                                                                                                                                                       |
| SNVS - Status, Not in Valid State, l3radesnode not in created state                           | l3radesnode must be in the created state                  | “ENT-ULSDCC-L3: Create a further OSI node” (12-60), “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67)                                                                                                                                                                                                                                                                                                                                  |
| SNVS - Status, Not in Valid State, LAN1 can not be disabled                                   | can’t disable LAN1                                        | “ENT-FECOM-LAN: Enter LAN related parameters” (12-44)                                                                                                                                                                                                                                                                                                                                                                                                           |

| Errorcode                                                                                      | Meaning (validation rule)                                      | Related to command ...                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, loopback does not exist                                     | loopback must exist                                            | “RLS-LPBK: Release loopback (here cross-connection loopback)” (7-97) - tributary, “RLS-LPBK: Release loopback (here facility loopback)” (7-114) - port                                                                                                                                         |
| SNVS - Status, Not in Valid State, maintenance condition                                       | check whether system is maintenance condition                  | “ENT-EQPT (slot): Enter equipment (slot)” (5-95), “ED-EQPT (slot): Edit equipment (slot)” (5-104), “DLT-EQPT (slot): Delete equipment (slot)” (5-112), “ENT-EQPT (Socket): Enter equipment” (5-138), “ED-EQPT (Socket): Edit equipment” (5-142), “DLT-EQPT (Socket): Delete equipment” (5-151) |
| SNVS - Status, Not in Valid State, Manual Switch to Worker for Protection Type 1x1 not allowed | MSP type 1:1 does not allow manual switch requests to worker   | “OPR-PROTNSW: Operate protection switch” (8-109)                                                                                                                                                                                                                                               |
| SNVS - Status, Not in Valid State, Manual Switch for Protection Type 1+1_Optimized not allowed | MSP type 1+1_optimized does not allow manual switch commands   |                                                                                                                                                                                                                                                                                                |
| SNVS - Status, Not in Valid State, Modification not allowed                                    | No Modification of rptmode if vlantagmd = 802.1TAG             | “ED-EPORT: Edit Ethernet port” (7-164)                                                                                                                                                                                                                                                         |
| SNVS - Status, Not in Valid State, Modification not allowed in Backward Compatible Mode        | Parameter modification not allowed in backward compatible mode | “ED-VCG: Edit virtual concatenation group” (7-189), “ED-EPORT: Edit Ethernet port” (7-164),                                                                                                                                                                                                    |

| Errorcode                                                                    | Meaning (validation rule)                                                        | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, multiple added XCs for MSSPRING TOP       | no multiple added XCs for MSSPRING TOP                                           | “ENT-CRS: Enter cross-connection” (7-25), “CNVT-CCT: Convert cross-connection topology” (7-69), “ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                                                                                                                                                                |
|                                                                              | no multiple added XCs for TOP                                                    | “ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                                                                                                                                                                                                                                                                |
| SNVS - Status, Not in Valid State, MS-DCC may not be enabled                 | changing of <i>portClass</i> only possible, if MS-DCC is not enabled on the port | “ED-STM1E: Edit STM1E port” (5-279), , , , “ED-STM256: Edit STM256 port” (5-380), , , , “ED-OC768: Edit OC768 port” (5-479)                                                                                                                                                                                                                                                                                 |
| SNVS - Status, Not in Valid State, new Tributary has existing loopback       | No crossconnection loopback existing                                             | , “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                                                                                                                                                                                                                      |
| SNVS - Status, Not in Valid State, new tributary used in test access session | Tributary not used in a test access session                                      |                                                                                                                                                                                                                                                                                                                                                                                                             |
| SNVS - Status, Not in Valid State, ndetmd must not be AUTO                   | Some parameters not settable for ports of <i>ndetmd</i> AUTO                     | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479) |
| SNVS - Status, Not in Valid State, no dcc channel enabled                    | dcc enabled                                                                      | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                                                                                                                                                                                                              |

| Errorcode                                                                       | Meaning (validation rule)                                              | Related to command ...                                                                                                                                                                        |
|---------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Not in Valid State, node in use as RA destination node                   | reject deletion when node is used as RA destination node by OSI node 1 | “DLT-ULSDCC-L3: Delete a node ID other than node-1” (12-74)                                                                                                                                   |
| SNVS - Status, Not in Valid State, node not in idle state                       | idle ring node for protocol conversion                                 | “ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                                                  |
| SNVS Status, Not in Valid State, no matching log entry                          | no matching log entry                                                  | “RTRV-LOG-NTFCN: Retrieve notification Log” (5-58),<br>“RTRV-LOG-ALM: Retrieve log alarm” (6-54),<br>“RTRV-LOG-PROTNSW: Retrieve log protection switch” (8-150)                               |
| SNVS - Status, Not in Valid State, no test access session on the test tributary | No test access session on the test tributary                           | “CHG-ACCMD: Change access mode” (7-249), “DISC-TACC: Disconnect test access” (7-253)                                                                                                          |
| SNVS - Status, Not in Valid State, not in Maintenance Condition                 | check of the maintenance condition                                     | “ED-EQPT (system): Edit equipment (system)” (5-49),<br>“SET-SID: Set SID” (5-69),<br>“ENT-FECOM-LAN: Enter LAN related parameters” (12-44),<br>“ENT-ULS: Enter upper layer stack” (12-98)     |
| SNVS - Status, Not in Valid State, NVM size not sufficient                      | Compatibility xcsetupand NVM size                                      | “ED-EQPT (system): Edit equipment (system)” (5-49)                                                                                                                                            |
| SNVS - Status, Not in Valid State, Optical Channel must be enabled              | enabling of outband FEC only if optical channel is enabled             | “ED-STM64: Edit STM64 port” (5-357), “ED-OC192: Edit OC192 port” (5-458),                                                                                                                     |
| SNVS - Status, Not in Valid State, osinode not in created state                 | osinode must be in the created state                                   | “ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack.” (12-67),<br>“DLT-ULSDCC-L3: Delete a node ID other than node-1” (12-74), “RTRV-MAP-NETWORK: Retrieve network map” (12-119) |



| Errorcode                                                                                               | Meaning (validation rule)                            | Related to command ...                                        |
|---------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------|
| SNVS - Status, Not in Valid State, other port of protection unit is assigned to a line timing reference | no timing reference on other port of protection unit | “ENT-PROTN-GRP: Enter protection group” (8-56)                |
| SNVS - Status, Not in Valid State, Output is already crossconnected                                     | output not in use                                    | “ENT-CRS: Enter cross-connection” (7-25)                      |
| SNVS - Status, Not in Valid State, parameter required                                                   | parameter sc or dest is missing                      | “OPR-SYNCNSW: Operate synchronization switch ” (10-31)        |
| SNVS - Status, Not in Valid State, Parameter(s) present which are not allowed                           | Only those parameter present which are needed        | “CNVT-CCT: Convert cross-connection topology” (7-69)          |
| SNVS - Not in Valid State, part of 1+1 MSP protection                                                   | DCC Protection                                       | “ENT-FECOM: Enter DCC channel related parameters” (12-16)     |
| SNVS - Status, Not in Valid State, Port is not out-of-service                                           | port is out-of-service                               | “OPR-LPBK: Operate loopback (here facility loopback)” (7-107) |
| SNVS - Status, Not in Valid State, port numbers cannot be changed when T-TD is enabled                  | no TCP port number change with enabled T-TD function | “ENT-ULS: Enter upper layer stack” (12-98)                    |

| Errorcode                                                                                 | Meaning (validation rule)                  | Related to command ...                                                                               |
|-------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, ports must be on different circuit packs               | port on different packs                    | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                       |
| SNVS - Status, Not in Valid State, ports have different interface types                   | common interface type                      |                                                                                                      |
| SNVS - Status, Not in Valid State, port is already used in another protection group       | port is only in one group                  |                                                                                                      |
| SNVS - Status, Not in Valid State, port rate not supported for this protection type       | supported port rate                        |                                                                                                      |
| SNVS - Status, Not in Valid State, ports have different port rates                        | common port rate                           |                                                                                                      |
| SNVS - Status, Not in Valid State, protection port is assigned to a line timing reference | no timing reference on protection port     |                                                                                                      |
| SNVS - Status, Not in Valid State, protection port is out-of-service                      | no out-of-service state on protection port |                                                                                                      |
| SNVS - Status, Not in Valid State, port used for Linear MSP                               | port used for Linear MSP                   | “CONN-TACC: Connect test access” (7-241)                                                             |
| SNVS - Status, Not in Valid State, port used for MSSPRING/BLSR                            | port used for MSSPRING/BLSR                |                                                                                                      |
| SNVS - Status, Not in Valid State, protection dcc channel is enabled                      | dcc protection side is enabled             | “ED-PROTN-GRP: Edit protection group” (8-80)                                                         |
| SNVS - Status, Not in Valid State, protection group still exist                           | no protection groups allowed               | “DLT-EQPT (slot): Delete equipment (slot)” (5-112),<br>“DLT-EQPT (Socket): Delete equipment” (5-151) |

| Errorcode                                                                                  | Meaning (validation rule)                                                                                                     | Related to command ...                                                                          |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, protection tributary is used in cross-connection        | No XC on protection tribs                                                                                                     | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                  |
| SNVS - Status, Not in Valid State, protection unit is activ                                | protection unit is active                                                                                                     | “DLT-PROTN-GRP: Delete protection group” (8-97)                                                 |
| SNVS - Status, Not in Valid State, reference unavailable                                   | reference switching during lockout or disabled state                                                                          | “OPR-SYNCNSW: Operate synchronization switch ” (10-31)                                          |
| SNVS - Status, Not in Valid State, request not practicable                                 | no change of the request state, request not practicable<br>forced or manual switch request while reference is in forced state |                                                                                                 |
| SNVS - Status, Not in Valid State, SONET port not allowed for TOP                          | SDH ports for TOP                                                                                                             | “ENT-PROTN-GRP: Enter protection group” (8-56),<br>“ED-PROTN-GRP: Edit protection group” (8-80) |
| SNVS - Status, Not in Valid State, static VLAN configuration not cleared                   | check whether VLAN lists are empty                                                                                            | “ED-EQPT (CP): Edit equipment (circuit pack)” (5-172)                                           |
| SNVS - Status, Not in Valid State, switch capacity below provisioned XC CP switch capacity | Switch capacity according XC CP                                                                                               | “ED-EQPT (system): Edit equipment (system)” (5-49)                                              |
| SNVS - Status, Not in Valid State, switch command not allowed for actual protection state  | allowed switch command in that state                                                                                          | “OPR-PROTNSW: Operate protection switch” (8-109)                                                |
| SNVS - Status, Not in Valid State, TARP not enabled                                        | check for correct TARP configuration                                                                                          | “ED-NE: Edit NE” (12-8)                                                                         |
| SNVS - Status, Not in Valid State, TARP propagation can not be disabled                    | Can't disable TARP propagation while LAN TARP Storm Suppression is enabled                                                    | “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks ” (12-84)                    |

| Errorcode                                                                                                | Meaning (validation rule)                                    | Related to command ...                                                                |
|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, TCA profile assigned                                                  | modifying the name of an active profile                      | “ED-TCA-PROF: Edit TCA profile” (9-81),<br>“DLT-TCA-PROF: Delete TCA Profile” (9-119) |
| SNVS - Status, Not in Valid State, Test Access not allowed on bridged cross connections                  | not allowed for bridged cross connections                    | “CONN-TACC: Connect test access” (7-241)                                              |
| SNVS - Status, Not in Valid State, Test Access not allowed with path protected tributaries               | Not allowed for path protected tributaries                   |                                                                                       |
| SNVS - Status, Not in Valid State, the CP is not plugged out                                             | CP must be plugged out                                       | “DLT-EQPT (slot): Delete equipment (slot)” (5-112)                                    |
| SNVS - Status, Not in Valid State, the Module is not plugged out                                         | module must be plugged out                                   | “DLT-EQPT (Socket): Delete equipment” (5-151)                                         |
| SNVS - Status, Not in Valid State, This Change of Protection Architecture not allowed, deprovision first | no change between MSP type 1+1_optimized and other MSP types | “ED-PROTN-GRP: Edit protection group” (8-80)                                          |
| SNVS - Status, Not in Valid State, TID inconsistent with existing cross-connection                       | TIDs consistent with existing cross-connection               | “ENT-CRS: Enter cross-connection” (7-25)                                              |
| SNVS - Status, Not in Valid State, timing clock mode inconsistent                                        | timing clock mode inconsistent                               | “SET-SYNCN: Set synchronization” (10-19)                                              |

| Errorcode                                                                                      | Meaning (validation rule)                                      | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, Timing reference is assigned to this port                   | servcond must be enabled when timing source                    | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479), |
| SNVS - Status, Not in Valid State, Too many cross-connection originating from same tributary   | restrict number of cross-connection using same input tributary | “ENT-CRS: Enter cross-connection” (7-25), “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                                                                                                                                                                               |
| SNVS - Status, Not in Valid State, transparent DCC connections are existing at protection pack | Transparent DCC connections                                    | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                                                                                                                                                                                                               |
| SNVS - Status, Not in Valid State, transparent DCC connections are still existing              | no transparent DCC connections                                 | “DLT-EQPT (slot): Delete equipment (slot)” (5-112), “DLT-EQPT (Socket): Delete equipment” (5-151) (                                                                                                                                                                                                                                                                                                          |
| SNVS - Status, Not in Valid State, Trial to change loopback type                               | no change of loopback allowed                                  | “OPR-LPBK: Operate loopback (here facility loopback)” (7-107)                                                                                                                                                                                                                                                                                                                                                |
| SNVS - Status, Not in Valid State, Tributary has existing loopback                             | no cross-connection loopback existing                          | “ENT-CRS: Enter cross-connection” (7-25)<br>“DLT-CRS: Delete cross-connection” (7-53),<br>“CONN-TACC: Connect test access” (7-241)                                                                                                                                                                                                                                                                           |

| Errorcode                                                                                                  | Meaning (validation rule)                                                        | Related to command ...                                                                             |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, tributary is not in state wait-to-restore                               | wait-to-restore is not pending                                                   | “OPR-VCGTRIB: Operate virtual concatenation group tributary” (7-229)                               |
| SNVS - Status, Not in Valid State, tributary is used in cross-connection loopback                          | no XC loopbacks on tribs                                                         | “ENT-PROTN-GRP: Enter protection group” (8-56),<br>“DLT-PROTN-GRP: Delete protection group” (8-97) |
| SNVS - Status, Not in Valid State, tributary is used in cross-connection                                   | no XC on tribs                                                                   | “ENT-PROTN-GRP: Enter protection group” (8-56),<br>“DLT-PROTN-GRP: Delete protection group” (8-97) |
| SNVS - Status, Not in Valid State, tributary not assigned as a test tributary                              | Tributary is not assigned as a test tributary                                    | “RTRV-TACC: Retrieve test access” (7-236)                                                          |
| SNVS - Status, Not in Valid State, trib of 1+1/1x1 port as input-trib in pathprotected crossconnection     | No trib of 1+1 port protection as newinaid (for path-protected cross-connection) | “CNVT-CCT: Convert cross-connection topology” (7-69)                                               |
| SNVS - Status, Not in Valid State, trib of MSP 1+1/1x1 port as input-trib in pathprotected crossconnection | No trib of any MSP port as in_aid (for path-protected cross-connection)          | “ENT-CRS: Enter cross-connection” (7-25)                                                           |
| SNVS - Status, Not in Valid State, Tributaries must not be on ports of portClass INNI                      | Tributaries must not belong to ports of portClass INNI                           |                                                                                                    |
| SNVS - Status, Not in Valid State, tributary rate not supported for protection with this port rate         | trib bandwidth is not greater as service bandwidth                               | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                     |

| Errorcode                                                                       | Meaning (validation rule)                         | Related to command ...                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, Tributary used in test access session        | No test access session                            | “ENT-CRS: Enter cross-connection” (7-25), ,<br>“OPR-LPBK (here cross-connection loopback)” (7-89), “ENT-PROTN-GRP: Enter protection group” (8-56),<br>“DLT-PROTN-GRP: Delete protection group” (8-97),<br>“DLT-EQPT (Socket): Delete equipment” (5-151) |
| SNVS - Status, Not in Valid State, T-TD enabled                                 | not allowed to disable TARP when T-TD is enabled  | “ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks ” (12-84)                                                                                                                                                                            |
| SNVS - Status, Not in Valid State, unknown IP address within MAP                | check for known IP address                        | “DLT-IP-MAP: Delete TCP/IP map” (12-110)                                                                                                                                                                                                                |
| SNVS - Status, Not in Valid State, unknown TARP Manual Adjacent NSAP            | Check for Existing TARP Manual Adjacent NSAP      | “DLT-ULSDCC-L4: Delete TARP manual adjacent NSAP address in layer 4 of the specified OSI stack” (12-91)                                                                                                                                                 |
| SNVS - Status, Not in Valid State, unsupported MS - SPRing/BLSR DNI/DRI         | supported MS-SPRing/BLSR DNI/DRI                  | “ENT-CRS: Enter cross-connection” (7-25),<br>“CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                       |
| SNVS - Status, Not in Valid State, working dcc channel is disabled              | dcc protection: working side is disabled          | “ED-PROTN-GRP: Edit protection group” (8-80)                                                                                                                                                                                                            |
| SNVS - Status, Not in Valid State, wrong IP configuration                       | Check for correct OSI node configuration          | “ENT-ULS: Enter upper layer stack” (12-98)                                                                                                                                                                                                              |
| SNVS - Status, Not in Valid State, XC are assigned to both EP155 packs          | XC are assigned to both EP155 packs               | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                                                          |
| SNVS - Status, Not in Valid State, XC are assigned to the protection EP155 pack | XC are assigned to proposed protection EP155 pack | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                                                                                                                                          |

| Errorcode                                                                           | Meaning (validation rule)              | Related to command ...                                                                                                                   |
|-------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| SNVS - Status, Not in Valid State, XC loopbacks still exist                         | no XC loopbacks allowed                | “DLT-EQPT (slot): Delete equipment (slot)” (5-112),<br>“DLT-EQPT (Socket): Delete equipment” (5-151) (                                   |
| SNVS - Status, Not in Valid State, XC loopbacks still exist at the protection pack. |                                        | “ENT-PROTN-GRP: Enter protection group” (8-56)                                                                                           |
| SNVS - Status, Not in Valid State, XC Pack not provisioned                          | XC pack is (pre-)provisioned           | “ENT-CRS: Enter cross-connection” (7-25),<br>“ENT-PROTN-GRP: Enter protection group” (8-56),<br>“CONN-TACC: Connect test access” (7-241) |
| SNVS - Status, Not in Valid State, xcsetup must be TRADITIONAL                      | Check of xcsetup for ip_ad_astn change | “ENT-ULS: Enter upper layer stack” (12-98)                                                                                               |
| SPFA - Status, Protection unit FAILED                                               | succeeding switch command              | “OPR-PROTNSW: Operate protection switch” (8-109),<br>“RLS-PROTNSW: Release protection switch” (8-125)                                    |
| SPFA - Status, Protection unit FAILED, APS did not succeed                          | APS switch time constraint             | “OPR-PROTNSW: Operate protection switch” (8-109)                                                                                         |
| SRAC - Status, Requested Access Configuration invalid, retrieved file NE mismatch   | product mismatch                       | “CPY-MEM: Copy memory” (11-20)                                                                                                           |
| SROF - Status, Requested Operation Failed                                           | non-hardware system difficulties       | “APPLY: Apply software generic” (11-42)                                                                                                  |
| SROF - Status, Requested Operation Failed, other system failure                     | APPLY applied on corrupted software    |                                                                                                                                          |



| Errorcode                                                                        | Meaning (validation rule)                                            | Related to command ...                                    |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------|
| SR0F - Status, Requested Operation Failed, external communications failure       | external communication failure                                       | “CPY-MEM: Copy memory” (11-20)                            |
| SR0F - Status, Requested Operation Failed, unsuccessful file transfer            | transferred file is deemed invalid                                   |                                                           |
| SRQN - Status, invalid request, uid not logged in                                | user with uid not logged in                                          | “CANC-USER-SECU: Cancel user security” (4-13)             |
| SSRD - Status, Switch Request Denied, clock mode inconsistent                    | clock backup switch request when clock mode is free running          | “OPR-SYNCNSW: Operate synchronization switch ” (10-31)    |
| SSRE - Status, System Resources Exceeded, allowed limit of DCC channels exceeded | validation rule for max number of DCC channels for MS/RS-DCC reached | “ENT-FECOM: Enter DCC channel related parameters” (12-16) |
|                                                                                  | validation rule if more than 64 DCC channels are assigned to node-1  |                                                           |

| Errorcode                                                                                    | Meaning (validation rule)                  | Related to command ...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SSRE - Status, System Resources Exceeded, limit of PM monitors exceeded                      | maximum number of enabled PM monitors      | “ED-STM1E: Edit STM1E port” (5-279), “ED-STM1: Edit STM1 port” (5-296), “ED-STM4: Edit STM4 port” (5-315), “ED-STM16: Edit STM16 port” (5-334), “ED-STM64: Edit STM64 port” (5-357), “ED-STM256: Edit STM256 port” (5-380), “ED-OC3: Edit OC3 port” (5-399), “ED-OC12: Edit OC12 port” (5-418), “ED-OC48: Edit OC48 port” (5-437), “ED-OC192: Edit OC192 port” (5-458), “ED-OC768: Edit OC768 port” (5-479), “ED-VC3: Edit VC3 tributary” (5-515), “ED-STS1: Edit STS1 tributary” (5-521), “ED-EPORT: Edit Ethernet port” (7-164), “ED-VCG: Edit virtual concatenation group” (7-189), “ED-VCGTRIB: Edit virtual concatenation group tributary” (7-219) |
| SSRE - Status, System Resources Exceeded, limit of ppgnames exceeded                         | maximum number of <i>ppgnames</i> exceeded | “ENT-CRS: Enter cross-connection” (7-25), “ED-PROTN-GRP: Edit protection group” (8-80), “CNVT-CCT: Convert cross-connection topology” (7-69)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SSRE - Status, System Resources Exceeded, limit of profiles exceeded                         | maximum number of profiles                 | “ENT-ASAP-PROF: Enter alarm severity assignment profile” (6-17)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                              | maximum number of TCA profiles reached     | “ENT-TCA-PROF: Enter TCA Profile” (9-60)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SSRE - Status, System Resources Exceeded, limit of transparent DCC Cross Connectins exceeded | maximum of DCC CCs exceeded                | “ENT-CRS-FECOM: Enter transparent DCC cross-connection” (12-31)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Errorcode                                                              | Meaning (validation rule)              | Related to command ...                   |
|------------------------------------------------------------------------|----------------------------------------|------------------------------------------|
| SSRE - Status, System Resources Exceeded, max. no. of profiles reached | Maximum number of TCA profiles reached | “ENT-TCA-PROF: Enter TCA Profile” (9-60) |







# 14 User privilege codes

## Overview

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**Purpose** The following table lists the user privilege codes



## List of user privilege codes

---

| TL1 command                                                                                   | User privilege code (UCFC/UCAL) |
|-----------------------------------------------------------------------------------------------|---------------------------------|
| ACT-USER: Activate user                                                                       | Any                             |
| ALW-MSG: Allow message                                                                        | M3§                             |
| APPLY: Apply software generic                                                                 | S4                              |
| CANC-USER: Cancel user                                                                        | Any                             |
| CANC-USER-SECU: Cancel user security                                                          | S5                              |
| CPY-MEM: Copy memory                                                                          | S4                              |
| DLT-ASAP-PROF: Delete ASAP profile                                                            | M3                              |
| DLT-CRS: Delete Cross-connection                                                              | P3                              |
| DLT-CRS-FECOM: Delete transparent DCC cross-connection                                        | M3                              |
| DLT-EQPT (slot): Delete equipment (slot)                                                      | P3                              |
| DLT-EQPT (Socket): Delete equipment                                                           |                                 |
| DLT-IP-MAP: Delete TCP/IP map                                                                 | S3                              |
| DLT-PROTN-GRP: Delete protection group                                                        | M4                              |
| DLT-TCA-PROF: Delete TCA Profile                                                              | PM3                             |
| DLT-ULSDCC-L3: Delete a node ID other than node-1                                             | S3                              |
| DLT-ULSDCC-L4: Delete TARP manual adjacent NSAP address in layer 4 of the specified OSI stack |                                 |
| DLT-USER-SECU: Delete user security                                                           | S5                              |
| ED-ASAP-PROF: Edit alarm severity assignment profile                                          | M3                              |
| ED-CRS: Edit Cross-connection                                                                 | P3                              |
| ED-DAT: Edit date and time                                                                    | S4                              |
| ED-EPORT: Edit Ethernet port                                                                  | P3                              |
| ED-EQPT (CP): Edit equipment (circuit pack)                                                   |                                 |
| ED-EQPT (shelf): Edit Equipment (shelf)                                                       |                                 |
| ED-EQPT (slot): Edit Equipment (slot)                                                         |                                 |
| ED-EQPT (Socket): Edit equipment                                                              |                                 |
| ED-EQPT (system): Edit Equipment (system)                                                     |                                 |

| <b>TL1 command</b>                                              | <b>User privilege code (UCFC/UCAL)</b> |
|-----------------------------------------------------------------|----------------------------------------|
| ED-FETID: Edit Far End Target Identifier                        | S3                                     |
| ED-MAP-RING: Edit map ring                                      | M3                                     |
| ED-NE: Edit NE                                                  | S3                                     |
| ED-NE-SECU: Edit NE security                                    | S5                                     |
| ED-NNCRS: Edit NN cross connection                              | P5                                     |
| ED-OC3: Edit OC3 port                                           | P3                                     |
| ED-OC12: Edit OC12 port                                         |                                        |
| ED-OC48: Edit OC48 port                                         |                                        |
| ED-OC192: Edit OC192 port                                       |                                        |
| ED-OC768: Edit OC768 port                                       |                                        |
| ED-PID: Edit password identifier                                | S1                                     |
| ED-PROTN-GRP: Edit protection group                             | M4                                     |
| ED-STATE-EQPT (system): Edit equipment state                    |                                        |
| ED-STM1: Edit STM1 port                                         | P3                                     |
| ED-STM1E: Edit STM1E port                                       |                                        |
| ED-STM4: Edit STM4 port                                         |                                        |
| ED-STM16: Edit STM16 port                                       |                                        |
| ED-STM64: Edit STM64 port                                       |                                        |
| ED-STM256: Edit STM256 port                                     |                                        |
| ED-STS1: Edit STS1 tributary                                    |                                        |
| ED-TCA-PROF: Edit TCA Profile                                   | PM3                                    |
| ED-ULSDCC-L3: Enter layer 3 related parameters of the OSI stack | S4                                     |
| ED-USER: Edit user                                              | S1                                     |
| ED-USER-SECU: Edit user security                                | S5                                     |
| ED-VC3: Edit VC3 tributary                                      | P3                                     |
| ED-VCG: Edit virtual concatenation group                        |                                        |
| ED-VCGTRIB: Edit virtual concatenation group tributary          |                                        |
| ED-VRTSW: Edit Virtual Switch                                   |                                        |
| ENT-ASAP-PROF: Enter alarm severity assignment profile          | M3                                     |
| ENT-CRS: Enter cross-connection                                 | P3                                     |

| <b>TL1 command</b>                                                | <b>User privilege code (UCFC/UCAL)</b> |
|-------------------------------------------------------------------|----------------------------------------|
| ENT-CRS-FECOM: Enter transparent DCC cross-connection             | M3                                     |
| ENT-EQPT (slot): Enter Equipment (slot)                           | P3                                     |
| ENT-EQPT (Socket): Enter equipment                                |                                        |
| ENT-FECOM: Enter DCC channel related parameters                   | S3                                     |
| ENT-FECOM-LAN: Enter LAN related parameters                       | S4                                     |
| ENT-IP-MAP: Enter TCP/IP map                                      | S3                                     |
| ENT-PROTN-GRP: Enter protection group                             | M4                                     |
| ENT-ROLL: Enter roll                                              | P3                                     |
| ENT-TCA-PROF: Enter TCA Profile                                   | PM3                                    |
| ENT-ULS: Enter upper layer stack                                  | S4                                     |
| ENT-ULSDCC-L3: Create a further OSI node                          |                                        |
| ENT-ULSDCC-L4: Enter layer 4 related parameters of the OSI stacks |                                        |
| ENT-USER-SECU: Enter user security                                | S5                                     |
| INIT-EQPT (slot): Initialize equipment (slot)                     | M4                                     |
| INH-MSG: Inhibit message                                          | M3                                     |
| INIT-REG: Initialize Register                                     | PM3                                    |
| INIT-SYS: Initialize System                                       | S4                                     |
| OPR-EXT-CONT: Operate External Control                            | M3                                     |
| OPR-LPBK: Operate loopback                                        | T4                                     |
| OPR-PROTNSW: Operate protection switch                            | M4                                     |
| OPR-SYNCNSW: Operate synchronization switch                       |                                        |
| OPR-VCGTRIB: Operate virtual concatenation group tributary        | M3                                     |
| RLS-EXT-CONT: Release external control                            | M3                                     |
| RLS-LPBK: Release loopback                                        | T4                                     |
| RLS-PROTNSW: Release protection switch                            | M4                                     |
| RLS-SYNCNSW: Release synchronization switch                       |                                        |
| RTRV-ALL: Retrieve all                                            | P1                                     |
| RTRV-ACTLCP: Retrieve acceptable circuit pack list                |                                        |
| RTRV-ACTL-CONT                                                    | M1                                     |
| RTRV-ALM: Retrieve alarm                                          |                                        |



| TL1 command                                               | User privilege code (UCFC/UCAL) |
|-----------------------------------------------------------|---------------------------------|
| RTRV-ALM-ENV: Retrieve alarm environment                  |                                 |
| RTRV-AO: Retrieve Autonomous Output                       | S1                              |
| RTRV-ASAP-ASGNMT: Retrieve ASAP assignment                | M1                              |
| RTRV-ASAP-PROF: Retrieve ASAP profile                     |                                 |
| RTRV-ATTR-CONT: Retrieve attribute control                |                                 |
| RTRV-ATTR-ENV: Retrieve attribute environment             |                                 |
| RTRV-ATTR-MSG: Retrieve attribute message                 |                                 |
| RTRV-COND: Retrieve condition                             |                                 |
| RTRV-CRS: Retrieve cross-connection                       | P1                              |
| RTRV-CRS-FECOM: Retrieve transparent DCC cross-connection | M1                              |
| RTRV-EPORT: Retrieve Ethernet port                        | P1                              |
| RTRV-EQPT (bay): Retrieve Equipment (bay)                 |                                 |
| RTRV-EQPT (CP): Retrieve equipment (circuit pack)         |                                 |
| RTRV-EQPT (shelf): Retrieve Equipment (shelf)             |                                 |
| RTRV-EQPT (slot): Retrieve Equipment (slot)               |                                 |
| RTRV-EQPT (Socket): Retrieve equipment                    |                                 |
| RTRV-EQPT (system): Retrieve Equipment (system)           |                                 |
| RTRV-EPM: Ethernet performance monitoring                 | PM1                             |
| RTRV-EXT-CONT: Retrieve external control                  | M1                              |
| RTRV-FECOM: Retrieve DCC related parameters               |                                 |
| RTRV-FECOM-LAN: Retrieve LAN channel related parameters   | S1                              |
| RTRV-HDR: Retrieve header                                 | Any                             |
| RTRV-IP-MAP: Retrieve TCP/IP map                          | S1                              |
| RTRV-LOG-ALM: Retrieve log alarm                          |                                 |
| RTRV-LOG-NNEVT: Retrieve NN Event Log                     |                                 |
| RTRV-LOG-NTFCN: Retrieve notification Log                 |                                 |
| RTRV-LOG-PROTNSW: Retrieve log protection switch          |                                 |
| RTRV-LPBK Retrieve loopback                               | T1                              |
| RTRV-MAP-NEIGHBOR: Retrieve map neighbor                  | S1                              |
| RTRV-MAP-NETWORK: Retrieve network map                    |                                 |

| TL1 command                                                   | User privilege code (UCFC/UCAL) |
|---------------------------------------------------------------|---------------------------------|
| RTRV-MAP-RING: Retrieve map ring                              | M1                              |
| RTRV-NE: Retrieve NE                                          | S1                              |
| RTRV-NE-SECU: Retrieve NE security                            |                                 |
| RTRV-OC3: Retrieve OC-3 port                                  | P1                              |
| RTRV-OC12: Retrieve OC-12 port                                |                                 |
| RTRV-OC48: Retrieve OC-48 port                                |                                 |
| RTRV-OC192: Retrieve OC-192 port                              |                                 |
| RTRV-OC768: Retrieve OC-768 port                              |                                 |
| RTRV-OW: Retrieve Orderwire and User Bytes                    | M1                              |
| RTRV-PM: Retrieve performance monitoring                      | PM1                             |
| RTRV-PRMTR-DATA: Retrieve parameter data                      | S1                              |
| RTRV-PRMTR-SFTWR: Retrieve parameter software                 |                                 |
| RTRV-PROTN-GRP: Retrieve protection group                     | M1                              |
| RTRV-STATE-EQPT (CP): Retrieve equipment state (circuit pack) | M1                              |
| RTRV-STATE-EQPT (slot): Retrieve equipment state (slot)       |                                 |
| RTRV-STATE-EQPT (Socket): Retrieve equipment state            |                                 |
| RTRV-STATE-EQPT (system): Retrieve equipment state            |                                 |
| RTRV-STM1: Retrieve STM-1 port                                | P1                              |
| RTRV-STM1E: Retrieve STM1E port                               |                                 |
| RTRV-STM4: Retrieve STM-4 port                                |                                 |
| RTRV-STM16: Retrieve STM-16 port                              |                                 |
| RTRV-STM64: Retrieve STM-64 port                              |                                 |
| RTRV-STM256: Retrieve STM-256 port                            |                                 |
| RTRV-STS1: Retrieve STS1 tributary                            |                                 |
| RTRV-SYCN: Retrieve synchronization                           | M1                              |
| RTRV-TCA-PROF: Retrieve TCA profile                           | PM1                             |
| RTRV-ULS: Retrieve upper layer stack                          | S1                              |
| RTRV-ULSDCC-L3: Retrieve layer 3 related parameters           | S1                              |
| RTRV-ULSDCC-L4: Retrieve OSI layer 4 related parameters       |                                 |
| RTRV-USER: Retrieve user                                      | S2                              |

| TL1 command                                                  | User privilege code (UCFC/UCAL) |
|--------------------------------------------------------------|---------------------------------|
| RTRV-USER-SECU: Retrieve user security                       | S4                              |
| RTRV-VC3: Retrieve VC3 tributary                             | P1                              |
| RTRV-VCG: Retrieve virtual concatenation group               |                                 |
| RTRV-VCGTRIB: Retrieve virtual concatenation group tributary |                                 |
| RTRV-VRTSW: Retrieve Virtual Switch                          |                                 |
| SET-ATTR-CONT: Set attribute control                         | M3                              |
| SET-ATTR-ENV: Set attribute environment                      |                                 |
| SET-MAP-RING: Set map ring                                   |                                 |
| SET-OW: Set Orderwire and User Bytes                         | M3                              |
| SET-SID: Set SID                                             | S4                              |
| SET-SYNCN: Set synchronization                               | M3                              |







# 15 Amendments

## Overview

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**Purpose** This chapter provides information about the amendments.

The amendments are divided in

- general amendments
- TL1 related amendments

where the TL1 related amendments will never show up if CIT GUI (Graphical) is used.

The syntax of the amendment number (e.g. Amendment 2.0 -nb12345) is as follows:

- first part: the amendment is known since this release
- second part: internal number.



# General amendments

## Overview

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**Purpose** This section lists the general amendments.

**Contents**

|                                                        |                       |
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| Configuration management                               | <a href="#">15-3</a>  |
| Protection (BLSR/S-SPRing, DRI/DNI,APS/MSP, UPSR/SNCP) | <a href="#">15-5</a>  |
| Equipment protection                                   | <a href="#">15-9</a>  |
| Fault/Alarm management                                 | <a href="#">15-10</a> |
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| Security management                                    | <a href="#">15-12</a> |
| Gigabit Ethernet                                       | <a href="#">15-13</a> |



## Configuration management

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### **Amendment 3.0.1 -nb17428      Wrong error response for port mode change with existing loopback**

If the interface standard mode of an optical port is tried to be changed during loopback is existing the system responses with following error code:

Status already operated, loopback already exists

The expected response would be:

Not in Valid State, a loopback is existing

**Workaround:** The operator can verify that the interface standard has not been changed by pressing the refresh-button on the CIT screen.

### **Amendment 3.0.1 -nb19693      Unallowed changes of cross-connection parameters while remote test access sessions are provisioned are not rejected properly**

If the operator attempts to change the interface standard or tributary mode while a test access session for this cross-connection is active then a slightly wrong error message will be returned.

### **Amendment 3.0.1 -nb18907      Preprovisioning of working or protection controller should be denied**

Against the specification the system does not refuse a pre-provisioning of working (CTLW) or protection controller (CTLP). If the operator performs the command ENT-EQPT >SLOT<“ CTLW ”for working or “CTLP ” for protection controller), the system completes the preprovisioning instead of rejecting it with the expected error response:

IDNV -Input, Data Not Valid

By this preprovisioning with a later insertion of a not matching CTL can be performed. But after a reboot the provisioning info is updated to the correct value.

**Workaround:** Do not use pre-provisioning functionality for controller packs.

### **Amendment 3.0.1 -nb03284      IDNV TL1 error code without parameter name**

A simple parameter problem within a TL1 command (e.g. parameter out of range) will result in an anonymous IDNV error, without mentioning the affected parameter:

```
IDNV /*Input, Data Not Valid */
```

In most cases the TL1 commands are hidden behind the GUI (of e.g. CIT or EMS), which does those checks up-front or does not allow to enter wrong values.

**Amendment 1.0 -nb07245    Vague error code when changing a port's signal rate with existing cross-connections**

When changing the input or output signal rate of a port while a cross-connection exists on the tributary, whose structure shall be changed, the error code:

```
SNVS /*Status, Not in Valid State */
```

instead of:

```
SNVS /*Status, Not in Valid State, inconsistent input  
signal */
```

is returned.

**Workaround:** The operator should check, if this could be the reason for the command rejection.





## Protection (BLSR/S-SPRing, DRI/DNI,APS/MSP, UPSR/SNCP)

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### Amendment 3.0.1 -nb19408

#### **Incorrect establishments of cross connections are not rejected properly**

If the operator attempts to establish a cross-connection in an improper system state such as:

- access to extra traffic (BLSR/MS-SPRing)
- access to VCG tributaries for path protected cross-connections.

then a slightly wrong error code will be returned.

### Amendment 3.0.1 -nb20146

#### **Improper creation and deletion of BLSR/S-SPRing while Remote Test Access active is rejected wrongly**

In this rainy day scenario the operator is informed to have a cross-connection provisioned instead of the fact that a test session is active which hinders BLSR/MSSPRING creation/deletion attempts.

**Workaround:** The operator should check, if this could be the reason for the command rejection.

### Amendment 3.0.1 -nb20234

#### **An MSP deletion while a Remote Test Access session is active will be rejected with a wrong error code**

The operator gets the hint that a cross connection is still established instead of the hint that a test session is still active.

**Workaround:** The operator should check, if this could be the reason for the command rejection.

### Amendment 3.0.1 -nb17590

#### **Wrong error code for creation of a BLSR/MS-SPRing protection group**

The error reply when creating a new BLSR/MS-SPRing protection group (TL1 command ENT-PROTN-GRP ) is wrong if the specified ports have different port rates: The expected response would be:

Status,Not in Valid State, ports have different port rates

The system responses:

Status,Not in Valid State, ports have different interface types

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -nb18022    MSP: Wrong Error Response for Enable of DCC switching**

The error response when it is tried to enable MSP slaved DCC switching and the DCC channel (section/line) of the working side is not yet enabled (TL1 command ED-PROTN-GRP ) does not follow the specification. The system responses:

SNVS -Status, Not in Valid State, no dcc channel enabled

The expected response would be:

SNVS -Status, Not in Valid State, working dcc channel disabled.

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -nb18544    MSP 1:1 Wrong error code for Forced Switch to protection with SF**

The error response when it is tried to perform a forced switch for an MSP 1:1 to protection side, which has a Signal Fail condition (TL1 command OPR-PROTN-SW ) does not follow the specification. The system responses:

SPFA -Status, Protection unit FAiled

The expected response would be:

SNVS -Status, Not in Valid State, switch command not allowed for actual protection state

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -nb17992    Wrong error response for set up of 1+1 optimized SP protection for SONET ports**

The error response if the operator tries to set up an 1+1 optimized MSP protection group for SONET ports (TL1 command ENT-PROTN-GRP ), what is not supported by LambdaUnite does not follow the specification. The system responses:

IDNC -Input, Data Not Consistent, No MSP protection supported for SONET mode

The expected response would be:

IDNC -Input, Data Not Consistent, MSP 1+1\_optimized not supported for SONET mode

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -nb18021**

**Wrong error response for changing the interface standard to SONET for an MSP 1+1 Optimized port**

The error response for changing the interface standard to SONET for an MSP 1+1 Optimized port (TL1 command ED-rr , where rr means all port rates:STM1,STM4,...) does not follow the specification. If the operator tries to change the interface standard (parameter "istd ") from SDH to SONET and the specified port is in an MSP 1+1 Optimized relation (working or protection port), a wrong error code is reported. The expected response would be:

SNVS -Status, Not in Valid State, a protection group is existing

The system responses:

SROF -Status, Requested Operation Failed

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -nb18746**

**Wrong error responses for converting an one-way cross connection to a not allowed path protected cross-connection**

The error response when converting an one-way cross-connection to a not allowed path-protected cross-connection (TL1 command CNVT-CCT ) does not follow the specification: If in\_aid (source of the unprotected cross connection) and/or newinaid (source of the new leg) is specifying a port in adaptive mode, the system responds:

IENE -Input, Entity Not Exists

The expected response would be:

SNVS -Status, Not in Valid State, input port(s) for pathprot. crossconnecton in adaptive mode

If the cross-connection is not allowed in combination with MS-SPRing/ BLSR, the system responds:

IENE -Input, Entity Not Exists

The expected response would be:

SNVS -Status, Not in Valid State, unsupported  
MS-SPRing/BLSR DNI/DRI

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -nb18164    Wrong error responses for converting an one-way cross-connection to a path-protected cross-connection with wrong SNC-type**

The error response when converting an one-way cross-connection to a path-protected cross-connection (TL1 command CNVT-CCT ) does not follow the specification: If the operator specifies Not Applicable as SNC-type (snctype=NA) for an SDH cross-connection the system responds:

IDNV -Input, Data Not Valid

The expected response would be:

IDNC -Input, Data, Not Consistent, SNC Type not compliant with existing crossconnection

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -nb18970    "Wait to Restore" will be displayed instead of "Wait to Rename" for MSP Optimized on the CIT screen**

In the CIT menu "View Protection " for the card switch status of MSP 1+1 Optimized, "Wait to Restore" will be displayed instead of "Wait to Rename".

For info: MSP 1+1 Optimized protection schemes have no switch back functionality. The actually worker line is called "Primary " and the actual protection line is called "Secondary ". Therefore it will be renamed a short time after a protection switch occurs.

**Workaround:** The user should know about this behavior.



## Equipment protection

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### **Amendment 3.0.1 -nb18848    Wrong error code when it is tried to perform a manual switch to a side with equipment faults**

The error response when the operator tries to perform a manual switch to a side, which has a equipment fail condition (TL1 command OPR-PROTNSW ) does not follow the specification. The system responds:

SARB -Status, All Resources Busy, system limit exceeded

The expected response would be:

SNVS -Status, Not in Valid State, switch command not allowed for actual protection state

**Workaround:** The operator should check, if this could be the reason for the command rejection.



## Fault/Alarm management

---

**Amendment 3.0.1 -nb15432    Retrieve Alarm Log returns error message instead of empty list**

The BROWSE mode for the command Retrieve Log Alarm RTRV-LOG-ALM does not work as specified. If there are no alarm entries in the specified interval the system returns with the error code

```
SNVS /*Status, Not in Valid State, no matching log entry
*/
```

Instead of this an empty log with a COMPLD message should be returned.

**Amendment 3.0.1 -nb15498    Retrieve Notification Log returns error message instead of empty list**

The BROWSE mode for the command Retrieve Log Notification RTRV- LOG-NTFCN does not work as specified. If there are no alarm entries in the specified interval the system returns with the error code

```
SNVS /*Status,Not in Valid State, no matching log entry */
```

Instead of this an empty log with a COMPLD message should be returned.



## Area DCN/DCC management

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**Amendment 3.0.1 -nb17090    No specific error message when 64 DCC channel limit is reached**

When the maximum number of available DCC channels is reached, the supplied error message does not distinguish the possible reasons and always replies with:

SSRE, System Resources Exceeded, allowed limit of DCC channels exceeded.



## Security management

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**Amendment 3.0.1 -nb08645    No common notification registration for database changes and state changes**

Registration for one of the both notification types does not automatically register for the other type too.





## Gigabit Ethernet

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### **Amendment 3.0.1 -nb18315    The TL1 command Retrieve Virtual Switch RTRV-VRTSW returns additional parameter**

The response to the TL1 command Retrieve Virtual Switch RTRV-VRTSW does not follow the specification. The NE response includes the parameter "rootport" with the value "UNAVAILABLE", if the Gigabit Ethernet card is not plugged in. The specification requests, that the parameter shall be omitted.

**Workaround:** The operator should ignore the parameter.



# TL1 amendments

## Overview

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**Purpose** This section lists the amendments related to the TL1 commands.

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## Configuration management

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### **Amendment 3.0.1 - nb17552      The TL1 command RTRV-ALL for STM1E ports returns not suitable parameter**

The response to the TL1 command RTRV-ALL does not follow the specification for STM1E ports. The NE response includes the not suitable parameter *opwl* (optical wavelength) with the value 0 for STM1E ports.

**Workaround:** This parameter should be ignored.

### **Amendment 3.0.1 - nb18341      RTRV-VC3/STS1: Dynamic parameters are not reported, when ALL AID is used**

Against the specification the TL1 command RTRV- VC3/STS1 do not report the so called dynamic parameters, if the user requests to retrieve the tributary information of all tributaries of one card by one command. In order to do this the user must specify a so called ALL tributary AID. An example of the ALL tributary AID is:  
1-1-#-#-1-1-ALL.

The following dynamic parameters are affected: *ptrc*, *ptrcst*, *siglb*, *trailstate*.

**Workaround:** The operator should use the RTRV-ALL command and set the *dyn* parameter to YES to retrieve the so called *dynamical* information with one command.

### **Amendment 3.0.1 - nb13872      RTRV-ASAP-ASGNMT returns empty reply for a non-existing profile**

The RTRV-ASAP-ASGNMT returns an empty reply if the specified profile does not exist. It should return the following error code:

```
IENE /*Input, Entity Not Exist, profile does not exist */
```

### **Amendment 2.0 - nb14052      Wrong error codes for loopback function**

Some error codes related to commands for the loopback function are wrong:

1. RTRV-LPBK command with modifier inconsistent to port rate is accepted, but should be denied with: Input,Data,Not Consistent,modifier is inconsistent with existing port rate.
2. RTRV-LPBK command with modifier inconsistent to the interface standard of the port is accepted, but should be denied with: Input,Data,Not Consistent,modifier is inconsistent with existing interface standard.
3. OPR-LPBK and RLS-LPBK commands with modifier inconsistent to the interface standard of the port are denied with wrong error code: Input,Command Not Valid,Interface Standard does not match but should be denied with: Input,Data,Not Consistent,modifier is inconsistent with existing interface standard.

**Workaround:** The operator should check, which constraint is not met if the command is rejected.

**Amendment 2.0 - hz02476 Unexpected blank line in ACT-USER reply**

The NE response for the ACT-USER command contains a blank line () in the normal completion message in front of the terminator (i.e. ';'').

**Workaround:** Ignore blank line.

**Amendment 2.0 - nb11158 RTRV-OC<n>/-STM<n> command denied instead of replying empty list**

If the operator uses a RTRV-OC<n>/-STM<n> request with

- port aid has not an ALL value within the slot field and an ALL value in the port field
- there are no OC<n> or STM<n> ports (i.e. the modifier in the command request does not match the provisioned interface standard).

then the NE rejects that RTRV request. It should just return an empty reply.

**Workaround:** Use the error reply as indication, that no ports are existing matching the AID filter. In addition the operator could use the

value ALL instead of OC<n> or STM<n> if wildcard (ALL) are used in the port AID.

**Amendment 1.0 - nb06908      Wrong error code when tried to change TID/SID in normal mode**

When it is tried to change the TID/SID of the system while it is not in maintenance mode the error code SNVS -Status,Not in Valid State is shown instead of SNVS -Status,Not in Valid State,not in Maintenance Condition.

**Workaround:** The operator should check , if this could be the reason for the command rejection.

**Amendment 1.0 - nb08505      'usall' wildcard in AID value is denied for RTRV-LPBK (port)**

A RTRV-LPBK command is denied, if the operator uses the value *usall* for the slot field within the AID parameter. But this value should be supported to browse only the universal slots.

**Workaround:** The operator should use the value *all* instead of *usall* in the RTRV request. This produces the same result as if the *usall* has been used.

**Amendment 1.0 - nb08205      'usall' wildcard does not work with RTRV-EQPT(cp) and RTRV-STATE-EQPT(cp)**

When using the *usall* wildcard in a CP-AID (i.e.1-1-#-#-usall-cp) with the RTRV-EQPT(cp) or RTRV-STATE-EQPT command the system responds with an empty reply instead of the expected output.

**Workaround:** Use the *all* wildcard instead (Example:1-1-#-#-all-cp).

□

## Synchronization management

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- Amendment 2.0 - nb10316    Wrong error code for SET-SYNCN command with parameter extout\_prov**
- If the NE is provisioned as SONET synchronization node, the two station clock outputs are always fix connected to line1/line2. Thus the parameter *extout\_prov* cannot be changed. If the operator issues a SET-SYNCN command with a wrong *extout\_prov* parameter value, a wrong error code is replied: IDNV /\*Input,Data Not Valid \*/ .
- Expected error code: IDNV /\*Invalid,Data Not Valid,invalid extout\_prov \*/
- Workaround:** The operator should check, if this could be the reason for the command rejection.
- 
- Amendment 1.0 - nb08514    Condition type parameter is sometimes missing in REPT EVT**
- The protection switch notification (TL1 message REPT EVT ) does sometimes not contain a value for the parameter *condtype*. This happens if the system clock mode change to the value LOCKED.
- Workaround:** Operator should use RTRV-SYNCN command to get actual state attribute values.
- 
- Amendment 1.0 - nb08515    Sometimes wrong condition type parameter value are reported in REPT EVT**
- The protection switch notification (TL1 message REPT EVT ) does sometimes contain a wrong value for the parameter *condtype*. This happens if the system clock mode changes to the value HOLDOVER.
- Workaround:** Operator should use RTRV-SYNCN command to get actual state attribute values.
- 
- Amendment 1.0 - nb07705    Wrong error code for the switch command for station clock output**

The error reply for the OPR-SYNCNSW-OUTREF (switch command for station clock output) is wrong in the following error scenarios:

1. Parameter *sc* (source) or *dest* (destination) is missing. Replied error code: INUP /\*Input,Non-null Unimplemented Parameter \*/ instead of SNVS /\*Status,Not in Valid State,parameter required \*/
2. Invalid switch command. Replied error code: IDNV /\*Input,Data Not Valid \*/instead of IDNV /\*Input,Data Not Valid,invalid sc\*/

**Workaround:** The operator should check, if this could be the reason for the command rejection.



## Protection (BLSR/S-SPRing, DRI/DNI,APS/MSP, UPSR/SNCP)

---

### Amendment 3.0.1 - nb17570

#### Wrong error responses for Operate Protection Switch

The error response to the OPR-PROTNSW command for a 2-/4-fibre BLSR/MS-SPRing protection group does not follow the specification:

1. If the operator enters an incomplete switch command the system responds: Input,Non-null Unimplemented Parameter. The expected response would be: Input,Data Not Valid,incomplete switch command
2. If the operator enters an inconsistent *aid* and *protype* the system responds Input,Invalid Access identifier,incorrect syntax. The expected response would be: Input,Data Not Valid,inconsistent aid and protype
3. If the operator enters an inconsistent *aid* and *rid* (2-/4-fibre MS-SPRing/BLSR): The system responds: Input,Invalid Access identifier,incorrect syntax. The expected response would be: Input,Data Not Valid,inconsistent aid and rid

**Workaround:** The operator should check, which constraint is not met if the command is rejected.

### Amendment 3.0.1 - nb 18762

#### MSP 1+1 accept incomplete Operate Protection Switch commands

For MSP 1+1 incomplete Operate Protection Switch commands are accepted:

- Operate Protection Switch command with parameter source *sc=lockout* and without parameter destination *dest* is accepted. This is not a real problem, because the *dest* is redundant information.
- Operate Protection Switch command with parameter destination *dest=wkg* should not be accepted without the source information. The resultant state Manual Switch is not worse because it does not prevent further automatic switching.

### Amendment 3.0.1 - nb18025/nb18076

#### Wrong error responses for MSP 1+1 optimized protection switch



The error response for a protection switch of an MSP 1+1 optimized protection group (TL1 command OPR-PROTNSW) does not follow the specification.

1. In case of an manual protection switch the system responses: SNVS -Status,Not in Valid State,switch command not allowed for actual protection state. **The expected response would be:** SNVS -Status,Not in Valid State,Manual Switch for Protection Type 1+1\_Optimized not allowed.
2. In the case the switch command is incomplete the system responses: SNVS -Status,Not in Valid State. **The expected response in this case would be:** IDNV -Input,Data Not Valid,incomplete switch command

**Workaround:** The operator should check, which constraint is not met if the command is rejected.

**Amendment 3.0.1 -  
nb18024**

**Wrong error response for changing operation mode from non-revertive to revertive for an MSP 1+1 optimized**

The error response for changing operation mode from non-revertive to revertive for an MSP 1+1 optimized (TL1 command ED-PROTN-GRP) does not follow the specification. If the operator tries to change operation mode from non-revertive to revertive for an MSP 1+1 optimized, a wrong error code is reported. **The expected response would be:** IDNC -Input,Data Not Consistent,MSP 1+1\_Optimized is always non-revertiv. **The system responses:** INUP -Input,Non-null Unimplemented Parameter

**Workaround:** The operator should check, if this could be the reason for the command rejection.

**Amendment 3.0.1 -  
nb18164-2**

**Wrong error responses for convert cross-connection**

The error response to the TL1 command CNVT- CCT does not follow the specification:

1. If the operator specifies original cross-connection (xc) topology as One Way occt=1WAY and new cross-connection topology as One Way cct=1WAY for an existing 1WAY cross-connection the system responds: SNVS -Status, Not in Valid State. The expected response would be: IDNC -Input,Data,no allowed topology conversion
2. If the operator specifies an *in\_aid* and an *out\_aid*, which do not form a cross-connection the system responds: IENE -Input, Entity Not Exists. The expected response would be: IENE -Input, Entity Not Exists, Specified crossconnection does not exist
3. If the operator applies CNVT-CCT- VC4 on an existing vc3 cross-connection the system responds IENE -Input, Entity Not Exists. The expected response would be: IDNC -Input,Data,Not Consistent, Rate is inconsistent with existing crossconnection
4. If the operator specifies original cross-connection (xc) topology as One Way Protection occt=1WAYPPROT and new cross-connection topology as One Way cct=1WAY for an existing 1WAY cross-connection the system responds: IENE -Input, Entity Not Exists. The expected response would be: IDNC -Input,Data,no allowed topology conversion
5. If the operator forgets to specify new cross-connection topology *cct* the system responds: SROF -Status,Requested Operation Failed. The expected response would be: IPMS -Input, Parameter MiSsing, <parameter name> missing
6. If the operator specifies parameter *inaid* equal parameter *newinaid* the system responds: IENE -Input,Entity Not Exists. The expected response would be: IDNV -Input,Data Not Valid,Both input tributaries are identical
7. If the operator specifies with *inaid* an SDH tributary and with *newinaid* an SONET tributary the system responds: IENE -Input,Entity Not Exists. The expected response would be: SNVS -Status,Not in Valid State,Different interface standards for input tributaries

8. If the operator specifies with ***inaid*** a vc3 tributary and with ***newinaid*** a vc4 tributary the system responds: IENE  
-Input,Entity Not Exists. The expected response would be:  
IDNC -Input,Data,Not Consistent,Specified new  
Tributary does not support the indicated rate
9. If the operator specifies a tributary, which does not exist, because of the used substructure the system responds: IENE  
-Input,Entity Not Exists. The expected response would be:  
IENE -Input,Entity Not Exists,Specified  
tributary/tributaries do not exist
10. If the operator tries to convert an unprotected connection to a protected connection and specifies the not allowed parameter ***in\_aid2***, then the system responds: IENE -Input,Entity Not Exists. The expected response would be: SNVS -Status,Not in Valid State,Parameter(s) present which are not allowed
11. If the operator tries to convert a protected connection to an unprotected connection and specifies not allowed parameters, then the system responds: IENE -Input,Entity Not Exists. The expected response would be: SNVS -Status,Not in Valid State,Parameter(s) present which are not allowed
12. If the operator forgets to specify the wait-to-restore time ***wtr*** the system responds: INUP -Input,Non-null Unimplemented Parameter. The expected response would be: IPMS  
-Input,Parameter MiSsing, <parameter name> is missing

**Workaround:** The operator should check, which constraint is not met if the command is rejected.

**Amendment 3.0.1 -  
nb17501**

**ENT-CRS behavior, if mandatory parameters are missing**

The TL1 command ENT-CRS does not follow the specification:

1. If the user tries to setup a path-protected cross-connection and does not specify one of the mandatory parameters ***htmr***, ***rme*** or ***wtr*** a misleading error code is returned: INUP -Input,Non Implemented Parameter is provided. The expected response would be: IPMS -Input,Parameter MiSsing, <parameter name> is missing
2. If the mandatory parameter ***snctyp*** is not specified then the command succeeds with the default of ***snctyp*** =NA.

**Workaround:** The operator should check, which constraint is not met if the command is rejected.

**Amendment 3.0.1 - nb20624      Unallowed changes of cross-connection parameters while remote test access sessions are provisioned are not properly rejected**

If the operator attempts to change the interface standard or tributary mode while a test access session for this cross connection is active then a slightly wrong error message will be returned. The system responds:

```
SNVS /* Status, Not in Valid State, cross-connections are  
still existing */
```

The expected response would be:

```
SNVS - Status, Not in Valid State, a test access session  
exists
```

**Amendment 3.0.1 - nb20623      Wrong error code for ENT-CRS**

If the operator attempts to establish cross-connection in an improper system state such as:

- access to extra traffic (BLSR/MS-SPRing) in non-TOPEX scenarios
- access to VCG tributaries for path protected cross connections

then a slightly wrong error code will be returned.

**Amendment 3.0.1 - nb18714      RTRV-PROTN-GRP should be denied when EQP GRP does not exist**

The response after RTRV-PROTN-GRP for any non-existing EQP GRP is COMPLD but should have been denied with error code: IENE -Input,Entity Not Exist.

**Amendment 2.0 - nb17572      Wrong error code for RLS-PROTNSW (2F/4F) command**

The error reply for the RLS-PROTNSW command for a 2-/4-fibre BLSR/ MS-SPRing protection group is wrong in the following error scenarios:

1. inconsistent *aid* and *prototype* replied error code: Input,Invalid ACcess identifier,incorrect syntaxinstead of Input,Data Not Valid,inconsistent aid and prototype
2. inconsistent *aid* and *rid* (2-/4-fibre MS-SPRing/BLSR) replied error code: Input,Invalid ACcess identifier,incorrect syntax instead of Input,Data Not Valid,inconsistent aid and rid

**Workaround:** The operator should check, which constraint is not met if the command is rejected.

#### Amendment 2.0 - nb09151

##### RTRV-CRS with ppgname as input parameter does not work

The TL1 command RTRV-CRS does allow to use *ppgname* (path protection group name) as input parameter to retrieve a set of path protected cross-connections. The replied set should contain all path-protected cross-connections where the associated path protection group has the specified *ppgname* value of the RTRV request. The NE will reply all cross-connections provisioned within the NE.

**Workaround:** None, i.e. do not use *ppgname* in RTRV-CRS request. Just use *in\_aid* parameter in RTRV-CRS requests.

#### Amendment 2.0 - nb11243

##### Wrong error code for RTRV-PROTN-GRP command

The error reply for the RTRV-PROTN-GRP command for protection group is wrong if the specified *prototype* is inconsistent to specified *aid*. Replied error code: IDNV /\*Input,Data Not Valid \*/. Expected error code: IDNV /\*Input,Data Not Valid,inconsistent aid and prototype \*/

**Workaround:** The operator should check, if this could be the reason for the command rejection.

#### Amendment 1.0 - nb07561

##### Incomplete continuity information in retrieved ring map

With the retrieval of the ring map also link status information should have been provided. This information should have been determined by the ring protection switch function inferred from the K-byte messages, whereas a span protection switch state would not be reflected in the map.

The following values are currently defined:

- LINK\_UP for a working link
- LINK\_DOWN for a failed link
- LINK\_OPEN for a non-existent link as in an open ring
- LINK\_UNKNOWN as initial default state prior to establishing LinkID, also used for all links when the map is retrieved from NVM
- LINK\_ISOLATED for a link in an isolated part of a segmented ring.

Only LINK\_ISOLATED is currently supported, in all other cases LINK\_UP is returned. However, the values currently not supported can also be derived from other K-byte information and defect information retrievable from the system or do not have relevance at the moment (LINK\_OPEN).

**Workaround:** Evaluate received K-byte information together with ring map if a local view on the ring state is necessary.

#### Amendment 1.0 - nb07738

#### Value BROWSE does not work for parameter replytype in RTRV-LOG-PROTNSW

The value BROWSE for the parameter *replytyp* in RTRV-LOG-PROTNSW request does not work; i.e. no protection switch events are returned although they are stored within that log. Thus the operator cannot use *startdate* and *starttime* as filter criteria for this log retrieval.

**Workaround:** The operator should not use the reply type parameter in the RTRV request; i.e. omit this optional parameter. Then he will get all protection switch events stored in the log properly.



## Equipment protection

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**Amendment 3.0.1 -  
nb18823****1+1 EP155 protection: Wrong error responses for Operate  
Protection Switch OPR-PROTNSW**

The error response to the TL1 command OPR-PROTNSW of an 1+1 EP155 protection does not follow the specification. If the user tries to perform a manual switch to a EP155, which is in equipment fail condition the system responds: SARB -Status, All Resources Busy, system limit exceeded. The expected response would be: SNVS -Status,Not in Valid State,switch command not allowed for actual protection state

**Workaround:** The operator should check, if this could be the reason for the command rejection.



## Fault/Alarm management

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**Amendment 3.0.1 -  
nb19072****The TL1 command RTRV-LOG-ERROR is not available**

The TL1 command RTRV-LOG-ERROR is not supported for LambdaUnite NE 's.

**Amendment 3.0.1 -  
nb20283****Changes of tributary output modes for test access sessions are not notified**

Changing test modes of a remote test access session does not generate change notification for *eomode* or *fomode*, but the value really changes. However the retrieval of this test access session delivers the correct values.

**Amendment 3.0.1 -  
nb19358****Slightly wrong error codes will be displayed for improper remote test access provisioning**

In case of improper remote test access provisioning (system conditions do not fit) the operator is informed by slightly wrong error codes. The following scenarios are affected:

- MONF, MONEF not allowed for unidirectional cross connections
- Test tributary already in use
- Pack with E-tributary not provisioned
- Cross-connection rate incompatible with test access rate
- Non-existing tributaries involved
- AID does not match to cross-connection rate
- XC pack not provisioned
- Test access not allowed for path protected cross-connections.

**Amendment 3.0.1 -  
nb19367****Unallowed modifications of remote test access session are not rejected properly**

If an operator attempts to change an existing test access session by:

- using wrong tributary rate within the referring TL1 command, or
- trying to convert a single test access tributary session into a dual one

then the operator gets slightly wrong error responses.



- Amendment 3.0.1 - nb19369**      **Deletion of a remote test access session with an incorrect tributary rate is improperly rejected**
- If the operator attempts to delete a remote test access session using a wrong tributary rate then a slightly wrong error message will be returned.
- Amendment 3.0.1 - nb19569**      **Establishment of remote test access for bridged cross-connections is not rejected properly**
- If an operator attempts to create a remote test access session on a cross-connection which is bridged (broadcast) then the operator gets a wrong error message.
- Amendment 3.0.1 - nb20039**      **Test access status retrieval is not rejected if selected test access tributary has no active test session**
- Invoking a test access status retrieval for a tributary or a set of tributaries (by using wild cards) returns an empty list instead of the specified rejection.
- Amendment 3.0.1 - nb20159**      **Output mode of test access sessions also reported for E-tributaries if not applicable for the test access mode**
- If the operator creates a test access session on an unidirectional cross-connection then the parameter *eomode* (output mode for E-Tributaries) is also reported although this makes no sense.
- Workaround:** Ignore the *eomode* value for test access sessions on an unidirectional cross-connection.
- Amendment 3.0.1 - nb17315**      **RTRV-ASAP-ASGNMT returns empty reply for a non existing ASAP**
- The RTRV-ASAP-ASGNMT command returns an empty reply, if the user requests assignments for a non existing ASAP profile. The expected response would be: IENE -Input,Entity Not Exist,profile does not exist.
- Amendment 2.1 - nb13138**      **Wrong error code for editing the alarm severity assignment profile**
- The error reply for editing the alarm severity assignment profile (TL1 command ED-ASAP-PROF ) is wrong if the specified probable cause

parameter is unknown for specified profile type replied error code:  
INUP /\*Input,Non-null Unimplemented Parameter \*/. Expected  
error code: SDNC /\*Status,Data Not Consistent,invalid ASAP  
parameter \*/

**Workaround:** The operator should check, if this could be the reason  
for the command rejection.

#### **Amendment 1.0 - nb07694      Inconsistently wrong error codes when assigning non-existent ASAP**

When trying to assign a not existing ASAP to an entity the operator  
gets the following messages for the entity:

system: SDNC /\*Status,Data Not Consistent,invalid ASAP  
parameter.\*/

slot: SROF /\*Status,Requested Operation Failed \*/

shelf: SROF /\*Status,Requested Operation Failed \*/

CP: SROF /\*Status,Requested Operation Failed \*/ or IDNV  
/\*Input,Data Not Valid \*/

Port: SDNC /\*Status,Data Not Consistent,invalid ASAP  
parameter.\*/

Trib.: SDNC /\*Status,Data Not Consistent,invalid ASAP  
parameter.\*/

While the correct answer should be for all entities: IDNV  
{/\*Input,Data Not Valid,ASAP profile does not exist \*/}

**Workaround:** The operator should check, if this could be the reason  
for the command rejection.

#### **Amendment 1.0 - nb07802      Replytype DBSYNC not supported for TL1 command RTRV-LOG-ALM**

If the TL1 command RTRV-LOG-ALM with *replytype*=DBSYNC is  
executed for a date and time for which no entry is found in the log,  
then the command is COMPLD with no responses, instead DENY'ed  
with SNVS - no matching log entry. This version of the command  
was intended to be used with managers for a faster database  
resynchronization but is currently not used by CIT/EMS/ Telcordia.

#### **Amendment 1.0 - hz01774      Retrieve-ASAP-Profilename (RTRV-ASAP-PROF) succeeds for invalid profile names**

Instead of returning an error message the RTRV-ASAP-PROF command returns success with an empty list when the operator tries to retrieve non-existing profiles.



## Remote test access

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### **Amendment 3.1 - nb23084    Wrong error code for CONN-TACC**

In case of improper remote test access provisioning (system conditions do not fit) the operator is informed by slightly wrong error codes.

Affected are following scenarios:

- **MONF, MONEF not allowed for unidirectional cross-connections**  
/\* Input, Data, Not Consistent \*/  
**instead of**  
/\* Status, Not in Valid State, invalid test access mode \*/
- **test tributary already in use**  
/\* Status, Not in Valid State, Too many crossconnection originating from same tributary \*/  
**instead of**  
/\* Input, Entity Already Exists, test access connection exists \*/
- **pack with E-tributary not provisioned**  
/\* Input, Entity Not Exists, Specified tributary/tributaries do not exist  
**instead of**  
/\* Status, Not in Valid State, circuit packs not provisioned \*/
- **cross-connection rate incompatible with test access rate.**  
\* Input Data Not Consistent, Specified Tributary does not support the indicated rate \*/  
**instead of**  
/\* Input, Parameter Not Consistent, Rate inconsistent with crossconnection rate \*/



## DCN/DCC management

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### **Amendment 3.0.1 - nb21562**

#### **No specific error message when 64 DCC channel limit reached**

When the maximum number of available DCC channels is reached, the supplied error message does not distinguish the possible reasons and always replies with: SSRE, System Resources Exceeded, allowed limit of DCC channels exceeded

### **Amendment 3.0.1 - nb16742**

#### **Wrong error code for ENT-FECOM-LAN command**

The error reply for the ENT-FECOM-LAN (Enter Far-End Communications for LAN) TL1 command can be misleading, if the operator specifies a wrong parameter value. In that cases the expected error code is: IDNV /\*Input,Data Not Valid,invalid <parameter name>/\*. The actual error code is: IDNV /\*Input,Non-null Unimplemented Parameter \*/

**Workaround:** The operator should check, which parameter value is invalid, if the command is rejected.

### **Amendment 3.0.1 - nb18048**

#### **TL1 command “Retrieve Transparent DCC Cross Connection ” displayed duplicate lines**

The response to the TL1 command RTRV-CRS-FECOM does not follow the specification. The NE responses partially with duplicate lines, if the operator retrieves transparent DCC connections by specifying an AID range. The NE lists every port with transparent DCC connections in this AID range. Thus, if both connected DCC ports are in the range, the connection is listed two times.

**Workaround:** The operator should ignore the duplicate lines.

### **Amendment 2.1 - nb12234**

#### **Wrong error code for RTRV-MAP-NETWORK with osinode not created**

If the operator tries to execute RTRV-MAP-NETWORK while the specified *osinode* is not in created state, the system responds with the unspecific error code: SROF -Status,Requested Operation Failed. The expected error code is: SNVS -Status,Not in Valid State,osinode not in created state

**Workaround:** The operator should check, if this could be the reason for the command rejection.

□

## Security management

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### **Amendment 1.0 - nb08615    Incorrect error messages for CANC-USER-SECU**

The error response messages for CANC-USER-SECU are incorrect in the case of:

- User Id not in the NE database The following response is returned: IDNV /\*Input,Data Not Valid\*/. The correct error response would be: IDNV /\*Input,Data Not Valid,uid not in NE data base\*/
- User not logged in the following response is returned: IDNV /\*Input,Data Not Valid\*/. The correct error response would be: SRQN /\*Status,invalid request,uid not logged in.\*/

**Workaround:** The operator should check, which constraint is not met if the command is rejected.

### **Amendment 1.0 - nb06960    Wrong error codes for security related commands (ED/ENT-USER- SECU)**

1. When an operator attempts to login with a disabled user ID (e.g. because login has expired) the error code PICC -Privilege,Illegal Command Code is shown instead of IDNV -Input,Data Not Valid.
2. When it is tried to change the user privilege code (UPC) to an invalid value (e.g. create an user by a non-superuser) the error code IDNV -Input,Data Not Valid is shown instead of IDNV -Input,Data Not Valid,Invalid UPC.
3. When it is tried to change security parameters for a non-existing UID the error code IDNV -Input,Data Not Valid is shown instead of IDNV -Input,Data Not Valid,Invalid UID.
4. When it is tried to create a new user with an already existing UID the error code SDNC -Status, Data Not Consistent, invalid instance of entity is shown instead of IDNV -Input,Data Not Valid,duplicate UID.
5. When it is tried to create new user with incompatible *uidclass* and screen parameters the error code IDNV -Input,Data Not Valid is shown instead of IDNV -Input,Data Not Valid,incompatible screen,uidclass parameter.

**Workaround:** The operator should check, which constraint is not met if the command is rejected.



## Gigabit Ethernet

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### **Amendment 3.0.1 - nb18202**

#### **Dynamic parameters are not reported, if card missing**

Against the specification the commands RTRV-EPORT and RTRV-VCG do not report the so called dynamic parameters, if the circuit pack is not available in the system.

The following dynamic parameters of an ethernet port are affected: *angst, fcndo, macaddr, rflst, stmd, stpop, stpid, stprole, vss, vvidlsd*.

The following dynamic parameters of a VGG port are affected: *mfiv, macaddr, stmd, stpop, stpid, stprole, vss, vvidlsd*.

**Workaround:** When the circuit pack is plugged in, then the dynamic parameters are reported.









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