

**Lucent Technologies**  
Bell Labs Innovations



# **Optical Line System Release 2.1**

Operations Systems Engineering  
Guide

824-102-201  
Issue 2.1  
November 1997

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Document Title: Optical Line System Release 2.1 Operations Systems Engineering Guide

Document No.: 824-102-201

Issue 2.1

Date: November 1997

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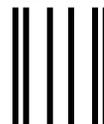
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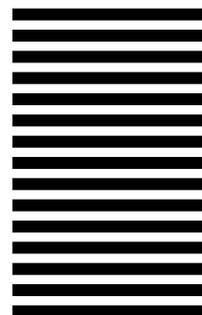
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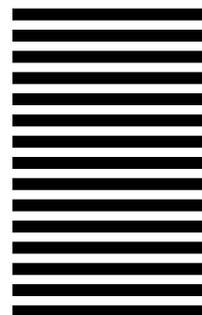
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# About This Document

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## **Purpose**

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This document includes operations systems (OS) engineering information for the Optical Lightwave System (OLS) (Release 2.1) with the Optical Translator (OT).

## **Intended Audience**

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This document is written primarily for network operations planners, facility maintenance center personnel, transmission engineers, and technical support staff. It may be used by anyone desiring specific information about the OS interfaces of the OLS with OT.

## **Reason for Reissue**

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This document, Issue 2.1, replaces the Optical Line System Issue 2B. This document was reissued to provide information about Issue 2.1. Significant changes include the following:

- Updated documentation/training data
- Updated TL1 message data
- Added new TL1 commands/messages

## How to Use This Document

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This document is divided into eight white tabbed parts as follows:

- "Contents" provides an overall document contents.
- "About This Document" provides a brief description about the purpose and what the document contains.
- "Introduction" provides a brief overview of the Operations Systems Interfaces.
- "TL1/X.25 Interface" provides information on the TL1/X.25 Interface.
- "OLS TL1 Message Details" provides detailed information on these TL1 Messages.
- "OLS Parallel Telemetry" provides information on parallel telemetry to the operations system.
- "Glossary" provides specialized terms with brief description.
- "Index" lists the page numbers for locating specific topics, terms, definitions, and concepts in this document.

## Related Documentation

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### Documents

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The following documents provide information about the Optical Line System with the Optical Translator:

- Number: 365-575-330  
Title: *Optical Line System (OLS), Applications, Planning, and Ordering Guide*  
Audience: System planners and engineers  
Content: Features, applications, general description, system planning/engineering, and ordering information
- Number: 365-575-331  
Title: *Optical Line System (OLS) User/Service Manual*  
Audience: End user maintenance personnel  
Content: Detailed system description technical specifications, operation and maintenance, and user interface descriptive tutorial information

- Number: 365-575-320  
Title: *Optical Line System (OLS), Installation Manual*  
Audience: Customers planning to install and turn up the equipment  
Content: Customer installation instructions
- Number: 365-575-315\* Comcode C107896607  
Title: *Optical Line System (OLS), Software Release Description, Release 2.0.0-OLS*  
Audience: End-user maintenance personnel  
Content: Status of problems fixed and known problems for Release 2.0.0-OLS software
- Number: 365-575-325\* Comcode C108066382  
Title: *Optical Line System (OLS), Software Release Description, Release 2.1.0-OLS*  
Audience: End-user maintenance personnel  
Content: Status of problems fixed and known problems for Release 2.1.0-OLS software
- Number: 5088TS  
Title: *Optical Line System (OLS), Technical Specifications*  
Audience: Engineers responsible for system planning, operation, and maintenance  
Content: Technical specifications of system components
- Number: 824-102-201  
Title: *Optical Line System (OLS), Operations Systems Engineering Guide*  
Audience: End-user maintenance personnel  
Content: Operations systems software commands, messages, and other information

\* The software release description is shipped with the Optical Line System and is not orderable from the Lucent Technologies Customer Information Center.

## Drawings

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The following drawings, which are shipped with the product, provide information about the Optical Line System. These drawings are needed for the installation process.

J68982C-1	Optical Line System Cabinet (equipment and circuit packs ordered with equipment)
J68982D-1	Optical Line System Integrated Bay (equipment and circuit packs ordered with equipment)
J68982CS-1	Optical Line System Cabinet Software and Documentation
J69000C-1	Optical Translator System (equipment and circuit packs ordered with equipment)
SD-5G276-01	Optical Line System Application Schematic
SD-6G156-01	Optical Translator System Application Schematic
SD-6G157-01	Optical Line System Application Schematic (Integrated Bay)
SDM-6G155-01	Optical Translator Shelf Circuit
T-5G273-30	Optical Line System Shelf Circuit
ED-7G033-30	Optical Line System Cabinet Framework
ED-7G028-20	Optical Line System Cable Assembly
ED-7G028-22	Optical Line System Intercabinet Cable Assembly
ED-7G028-30	Optical Line System Shelf Assembly
ED-7G027-30	Optical Line System User/Fuse Panel/Power Indicating Assembly
ED-7G044-30	Optical Translator Cabinet Framework
ED-7G045-20	Optical Translator Cable Assembly
ED-7G045-22	Optical Translator (Intercabinet Cable) Assembly
ED-7G045-30	Optical Translator Shelf Assembly
ED-7G048-30	Optical Line System Integrated Bay Framework

ED-5D785-70	5ESS-2000 Switching Equipment Global Single Bay Frame Doors and Cabinet Assembly (Phase II)
ED-5D786-70	5ESS-2000 Global Switching Equipment End Guard Assembly
ED-8C800-50	Seismic Network Bay Frame
ED-5D779-70	5ESS-2000 Global Switching Equipment Cable Rack Assembly
FPD-804-604-161-( )	Optical Line System (Floor Plan Data Sheets)
FPD-804-604-162-( )	Optical Translator Cabinet (Floor Plan Data Sheets)
T-5G276-33	Optical Line System Interconnection Circuit
T-5G276-30	Optical Line System Circuit
T-6G156-30	Optical Translator Circuit
T-6G156-33	Optical Translator Interconnection Circuit

For more information, see "How to Order Documents," later in this chapter.

### **Documentation for Related Equipment and Software**

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The following documents provide information about related equipment:

065-215-200	<i>Seismic Network Bay Frame Applications, Planning, and Ordering Guide</i>
065-215-250	<i>Seismic Network Bay Frame Installation Guide</i>
363-206-200	<i>DDM-2000 OC-3 and OC-12 Multiplexers, Applications, Planning, and Ordering Guide</i>
363-206-202	<i>DDM-2000 OC-3 Multiplexer, User/Service Manual</i>
363-206-207	<i>DDM-2000 OC-12 Multiplexer, User/Service Manual</i>
365-575-102	<i>FT-2000 OC-48 Lightwave System, User/Service Manual</i>
365-575-115	<i>FT-2000 OC-48 Lightwave System, Installation Manual</i>
365-575-100	<i>FT-2000 OC-48 Lightwave System, Applications, Planning and Ordering Guide</i>

365-575-230	<i>FT-2000 OC-48 Large Capacity Terminal, Applications, Planning, and Ordering Guide</i>
365-575-231	<i>FT-2000 OC-48 Large Capacity Terminal, User/Service Manual</i>
365-575-220	<i>FT-2000 OC-48 Large Capacity Terminal, Installation Manual</i>
365-575-211	<i>FT-2000 OC-48 Large Capacity Terminal, Integration Manual</i>
365-575-212	<i>FT-2000 OC-48 Large Capacity Terminal, Modification Implementation Procedure</i>
365-575-215	<i>FT-2000 OC-48 Large Capacity Terminal, Software Release Description, Release 1.0.0-LCT</i>
365-575-xxx	<i>FT-2000 OC-48 Large Capacity Terminal, Software Release Description, Release 2.0.0-LCT</i>
5408TS	<i>FT-2000 OC-48 Large Capacity Terminal, Technical Specifications</i>
636-299-120	<i><b>LGX</b><sup>®</sup> Distribution System, Planning, Engineering, Installation, and Operation System Reference Guide</i>
824-102-147	<i>2000 Product Family Operations Interworking Guide</i>
824-102-148	<i>FT-2000 OC-48 Lightwave System Operations Systems Engineering Guide</i>
824-102-148	<i>FT-2000 OC-48 Lightwave System Operations Systems Engineering Guide</i>
824-102-151	<i>DDM-2000 Multiplexer Operations Systems Engineering Guide</i>

## **Electronic Documentation**

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- To order, call your Technical Information Resource Manager, your Lucent Technologies Account Executive, or the Lucent Technologies Customer Information Center (1-888-LUCENT-8). The CD-ROM Product Line Order Number for the Lucent Technologies transmission product documentation is 300-100-010.
- For pricing information, contact your Lucent Technologies Account Executive or the Lucent Technologies Customer Information Center (1-888-LUCENT-8).
- For technical information, call Lucent Technologies Documentation Support (1-888-LTINFO6).

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Lucent Technologies entities should use Form IND 1-80.80 FA, available through the Customer Information Center.

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## **Training**

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No product offering is complete without a formal training package. The Customer Training and Information Products (CTIP) Organization provides management courses for system planning, engineering, and ordering, as well as training telecommunications technicians in installation, operations, and maintenance. Suitcasing of these courses is also available. Contact the CTIP Organization on **1-800-LUCENT8** to enroll in training classes. To arrange suitcase sessions, call the Product Training Manager on **1-800-432-7317** (within USA) or **1-614-764-5542** (outside USA).

The following courses are provided by the CTIP Organization:

- Number: LW2200  
Title: *Optical Networking Overview (with FT-2000 OC-48 and Optical Line System)*  
Audience: Network planners, product managers, product evaluation/selection managers, equipment engineers, and sales personnel. In general, the course will be helpful to anyone needing a high-level description of networking components  
Content: Introduction to the products offered by Lucent Technologies for optical networking, that is, building high-capacity transmission networks to transport optical signals  
Prerequisites: None. However, the student must have a basic understanding of digital fundamentals and lightwave transmission systems
- Number: LW2252 (Replaces LW2250 and LW2350)  
Title: *Optical Line System with Optical Translator - Applications, Architecture, Planning and Ordering*  
Audience: Fundamental planners, account executives, private telecommunications network technical consultants, facility planners, outside plant engineers, central office equipment engineers, and private network design engineers  
Content: Basic synchronous optical network (SONET) terms, applications (for example, point-to-point, rings), architecture (that is, cabinets, bays, shelves, circuit packs), operation, administration, maintenance, and provisioning (OAM&P) features, and equipment cabling specifications for engineering/ordering the Optical Line System

Prerequisites: The student should have a basic understanding of digital fundamentals and lightwave transmission systems. Unless the student already has experience on a lightwave transmission assignment, the following courses are prerequisites:

- LW2200, Optical Networking Overview
- TR0510, Transmission Principles, self-paced (optional)

■ Number: LW2253 (Replaces LW2250 and LW2350)

Title: *FT-2000 OC-48 Large Capacity Terminal Applications, Architecture, Planning and Ordering*

Audience: Fundamental planners, account executives, private telecommunications network technical consultants, facility planners, outside plant engineers, central office equipment engineers, and private network design engineers

Content: Basic synchronous optical network (SONET) terms, applications (for example, point-to-point, rings), architecture (that is, bays, shelves, circuit packs), operation, administration, maintenance, and provisioning (OAM&P) features, and equipment cabling specifications for engineering/ordering the FT-2000 OC-48 Large Capacity Terminal

Prerequisites: The student should have a basic understanding of digital fundamentals and lightwave transmission systems. Unless the student already has experience on a lightwave transmission assignment, the following courses are prerequisites:

- LW2200, Optical Networking Overview
- TR0510, Transmission Principles, self-paced (optional)

■ Number: LW2652 (Replaces LW2650)

Title: *Optical Line System with Optical Translator - Operations and Maintenance*

Audience: Technicians, installers, maintenance engineers, technical support personnel, product evaluators, and anyone desiring operations and maintenance information for the Optical Line System

Content: Description of initial turnup and day-to-day operations and maintenance tasks. Emphasis on developing the following:

- Skills using the user/service manual
- Competence performing day-to-day provisioning and maintenance tasks of the OLS and OT

Prerequisites: The student should have a basic understanding of digital fundamentals and lightwave transmission systems. Unless the student already has experience on a lightwave transmission assignment, the following course is a prerequisite:

- LW2200, Optical Networking Overview

■ Number: LW2653 (Replaces LW2650)

Title: *FT-2000 OC-48 Large Capacity Terminal Operations and Maintenance*

Audience: Technicians, installers, maintenance engineers, technical support personnel, product evaluators, and anyone desiring operations and maintenance information for the FT-2000 OC-48 Large Capacity Terminal

Content: Description of initial turnup and day-to-day operations and maintenance tasks. Emphasis on developing the following:

- Skills using the user/service manual
- Competence performing day-to-day provisioning and maintenance tasks of the LCT

Prerequisites: The student should have a basic understanding of digital fundamentals and lightwave transmission systems. Unless the student already has experience on a lightwave transmission assignment, the following course is a prerequisite:

- LW2200, Optical Networking Overview

■ Number: LW2452

Title: *Optical Line System with Optical Translator, Installation and Test (Hands-On)*

Audience: Technicians, installers, maintenance engineers, technical support personnel, product evaluators, and anyone desiring installation information for the OLS-OT

Content: Practical hands-on experience installing the OLS-OT, equipping the system with required circuit packs/units, and conducting installation testing

Prerequisites: None

- Number: LW2453  
Title: *FT-2000 OC-48 Large Capacity Terminal, Installation and Test (Hands-On)*  
Audience: Technicians, installers, maintenance engineers, technical support personnel, product evaluators, and anyone desiring installation information for the FT-2000 OC-48 Large Capacity Terminal  
Content: Practical hands-on experience installing the FT-2000 OC-48 Large Capacity Terminal, equipping the system with required circuit packs/units, and conducting installation testing  
Prerequisites: None
- Number: LW2454  
Title: *Optical Line System with Optical Translator, Installation (Self-paced with videos)*  
Audience: Personnel responsible for the installation of OLS-OT equipment  
Content: Instruction on the equipment architecture, the installation methods and tests, and the content of the Installation Manual  
Prerequisite: TR0510, Transmission Principles, self-paced
- Number: LW2455  
Title: *FT-2000 OC-48 Large Capacity Terminal Installation (Self-paced with videos)*  
Audience: Personnel responsible for the installation of LCT equipment  
Content: Instruction on the equipment architecture, the installation methods and tests, and the content of the Installation Manual  
Prerequisite: TR2448, FT-2000 OC-48 Installation (Hands-on)

## **Product Support**

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The Lucent Technologies Customer Technical Support (CTS) Organization is committed to providing customers with quality product support services. Whether you need assistance in engineering, installation, normal system maintenance, or disaster recovery, the support staff provides you with the quality technical support you need to get your job done. Each segment of the CTS organization regards the customer as its highest priority and understands your obligation to maintain quality service for your customer.

Within the CTS organization, the Engineering and Installation Services group provides a highly skilled force of support personnel to provide customers with quality engineering and installation services. These engineering and installation specialists use state-of-the-art technology, equipment, and procedures to provide customers with highly competent, rapid responses services.

These services include the following:

- Analyzing your equipment request
- Preparing a detailed specification for manufacturing and installation
- Creating and maintaining job records
- Installing the equipment
- Testing and turning over a working system.

When the CTS organization provides job records and installs the equipment, operationally affective changes to the system are automatically identified and applied to the system at no additional cost.

The Engineering and Installation Services group provides the customer with an individually tailored, quality-tested job that meets our published high standards and the customer's operational requirements. The group ensures that the customer's system order is integrated into a complete working system tailored to office conditions and preferences. This process provides for the customer's complete needs. It includes provisions for cabling, lighting, power equipment, and ancillary connections to local and/or remote alarm systems. The group will also respond to any customer changes that occur during installation.

All equipment engineered and installed by Lucent Technologies is thoroughly tested and integrated into a reliable system at cutover. Once approved by Lucent Technologies Quality Assurance Test group (the industry's toughest), the system is turned over to the customer. The group also provides any specialized engineering and installation services required for unusual or highly individualized applications. These specialized services may include engineering consultations and data base preparation. Your local Account Executive can provide more information about these services.

## **Technical Support**

---

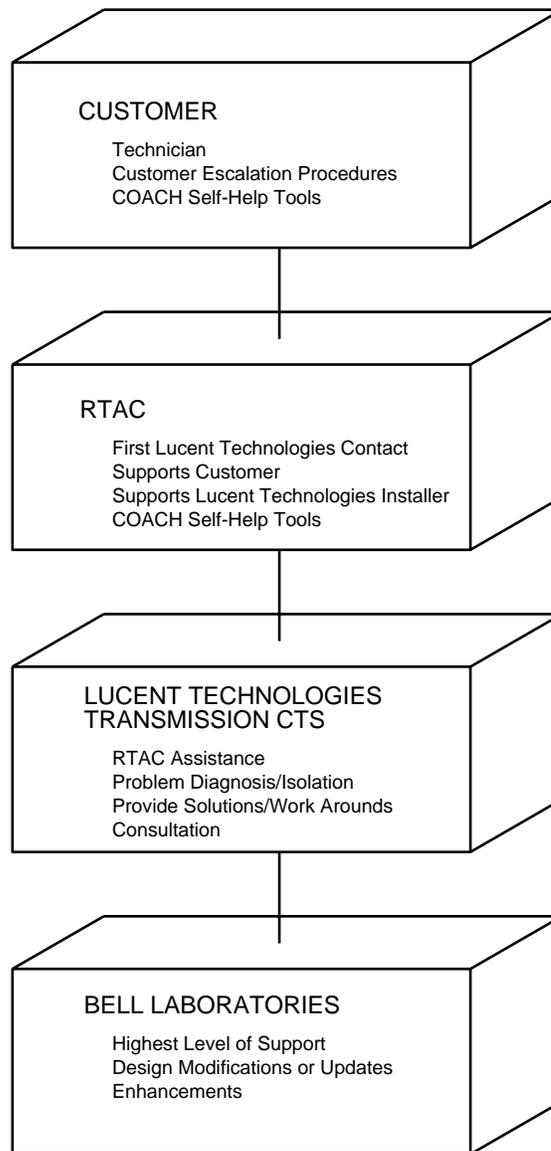
Assistance in maintaining your installed system is available through the Regional Technical Assistance Center (RTAC) and the Customer Technical Support (CTS). As shown in 1, your single point of contact is the RTAC. RTAC personnel troubleshoot field problems 24 hours a day over the phone and, if necessary, on site. For technical assistance, simply call **1-800-225-RTAC**. One call guarantees support.

RTAC organizations are supported by a centralized CTS for transmission products. The CTS maintains a close relationship with Bell Laboratories and other Lucent Technologies organizations to expedite resolutions and maintain contact with the development community. This association provides continuous accessibility to every phase of a product life cycle and assures a prompt resolution to all inquiries.

The CTS has also established a technical support medium: COACH support tools. COACH is a system of on-line support tools aimed at providing product news and bulletins, diagnostic services, compatibility information, and on-line documents. COACH tools provide the most up-to-date product information so that problems are either prevented or quickly resolved. COACH tools reside on a dedicated time-share computer accessible over toll free lines and are available 24 hours a day, 7 days a week.

Many transmission products, including the DDM-2000 multiplexers, are supported by COACH.

Once connected to COACH, the user specifies which product to access and COACH grants the appropriate combination of tools and commands. The user reaches each one of these tools and commands through a centralized, menu-driven computer program. Every screen provides help in making appropriate menu selections. COACH users will achieve proficiency quickly because of the consistency of menu selections among products.



---

**Figure 1. Product Support**

These COACH tools are available to the user:

Diagnostic dictionary	The diagnostic dictionary contains histories of previously encountered problems and the descriptions of the solutions or work arounds. Your support staff can use this tool when published documentation or standard diagnostic procedures fail to address a problem.
News and bulletins	Immediately after a user logs into the COACH tools, the news and bulletins tool displays bulletins containing urgent information relating to all the user's products. All users are automatically notified about urgent matters, such as problems with scheduled releases, recalls of hardware or software, or scheduled maintenance for computer support. Less urgent messages are distributed through news items that can be sent to individuals or categories of users. Notification of news appears on the screen immediately following current bulletins.
Compatibility data	Occasionally, hardware/software configuration problems arise when new software generics are issued. The compatibility data tools permit users to view the correct hardware configuration associated with a specific software release. The user simply enters the appropriate software release number and COACH responds with page-formatted lists of circuit packs compatible with the selected software release. This tool also contains the latest issue numbers of the customer documentation.
COACH user's guide	COACH supplies an on-line version of its user's guide. The COACH user's guide includes instructions on using the customer support tools and documents any changes to the previous version of the guide.

For information about how to access COACH, contact:

COACH Software Development  
Lucent Technologies — Department JC09110A0  
1600 Osgood St.  
North Andover, MA 01845  
Telephone: **1-800-238-4021**  
FAX: **1-508-960-1772**

The RTAC and CTS organization strive to provide proactive and responsive technical customer support for all its products. Through the combined efforts of the individual customer support groups and through COACH tools, the RTAC and CTS organization provide the best possible customer support.

The Lucent Technologies Customer Training and Information Products Organization provides a contact to report errors to or to ask questions about information in this document. The document support telephone number is **1-888-LTINFO6** (Monday through Friday, 8:00 a.m. to 4:00 p.m. EST).

### **Product Change Notifications**

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During the life of a product, changes may be required in service to correct an existing or potential problem. Product changes are issued in the form of product change notices (PCNs). Customers are notified about PCNs through the Design Change Management System (DCMS). The DCMS is an on-line tool similar to COACH. For more information about DCMS, contact your local Account Executive.

### **How to Comment on the Optical Line System**

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The Regional Technical Assistance Center (RTAC) technical assistance telephone number is available 24 hours a day for customers to provide feedback and enhancement suggestions for improving the Optical Line System. The toll free number is **1-800-225-RTAC**.

### **How to Comment on This Document**

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Feedback forms are located immediately after the title page of this document. Please fill out the form and return it to the address stamped on the front of the form, or fax it to the number provided on the form.

If the feedback forms are missing, send comments on this document to:

Documentation Services  
Lucent Technologies  
2400 Reynolda Road  
Winston-Salem, NC 27106

You may also report errors or request changes to this document by calling the toll free number, **1-888-LTINFO6**, and giving the 9-digit document number.

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**Introduction**

**1**

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---

# Introduction

# 1

---

## Overview

---

This document provides information on Lucent Technologies Optical Lightwave System (OLS) TL1/X.25 and parallel telemetry operations system (OS) interfaces.

## Introduction to Operations Systems Interfaces

---

The OLS Transaction Language 1 (TL1) and parallel telemetry interfaces communicate alarm, status, and control information to/from the alarm surveillance OS. The OLS TL1/X.25 interface is based on Bellcore TR-TSY-000833, Issue 3, Revision 1\*, and TR-NWT-000833, Issue 1, Supplement 1. The OLS parallel telemetry interface uses contact closures.

The OLS uses parallel telemetry to communicate with a telemetry remote unit; the telemetry remote unit communicates with the OS. The TL1 interface communicates directly with the OS, not requiring the use of telemetry remote units or mediation devices (MDs).

The OLS TL1 interface provides significantly more detailed alarm and status information than the parallel telemetry interface. The OLS TL1 interface also supports performance-monitoring (PM) threshold-crossing alerts (TCAs) and retrievals of current and historical PM data.

---

\* Where TR-TSY-000833, Issue 3, Rev. 1 was deficient, the OLS conforms to Bellcore's TR-NWT-000833, Issue 1.

---

**Optical Line System (OLS)  
TL1/X.25 Interface**

**2**

---

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---

# Optical Line System (OLS) TL1/X.25 Interface

# 2

---

## Overview

This section provides information on the TL1/X.25 interface to the Optical Line System (OLS). This section includes information about X.25 specifications.

For information on TL1 Commands/Messages, refer to Section 3, "***TL1 Message Details***".

## Introduction

The OLS supports a TL1/X.25 interface to report alarm and status conditions and performance-monitoring data to operations systems (OS) such as NMA (Network Monitoring and Analysis) operations systems. (See Bellcore's SR-STS-OO1665 for a list of NMA releases compatible with the OLS software releases.) The OLS TL1/X.25 interface provides significantly more detailed information than the alternate parallel telemetry interface to the operations system (OS). The OLS TL1 messages are based on Bellcore's TR-TSY-000833, Issue 3, Revision 1.†

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† Where TR-TSY-000833, Issue 3, Revision 1 was deficient, the OLS conforms to Bellcore's TR-NWT-000833, Issue 1.

## **X.25 Technical Specifications**

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Each OLS is capable of supporting a direct, synchronous TL1/X.25 link to the OS. The following tables list X.25 detailed technical specifications that are supported by the OLS.

The X.25 interface to the OLS supports two permanent virtual circuits (PVCs) and up to six switched virtual circuits (SVCs). Every virtual circuit may be used to issue TL1 commands to the OLS and obtain responses. Once communication is established, the OS can send a TL1 command to any connected virtual circuit (VC) and can expect the OLS to reply via the same VC.

At the packet layer, the OLS is configured as a passive data terminating equipment (DTE) with the parameters listed in Table 2-1.

**Table 2-1. TL1/X.25 Interface — X.25 Packet Layer Parameters**

<b>Parameter</b>	<b>Value</b>
Packet Size	256 bytes
Window Size	2 packets
D bit support	No
M bit support	Yes
Q bit support	No

---

At the link layer, the OLS uses the standard link access procedure B (LAPB) protocol with the parameters listed in Table 2-2.

**Table 2-2. TL1/X.25 Interface — LAPB Link Layer Parameters**

<b>Parameter</b>	<b>Value</b>
Maximum Frame Size	2104 bits
Modulo	8
Window Size	7 frames
n2	6 retries
T1	3 seconds
T3	not supported

---

The OLS uses synchronous, full duplex, continuous carrier communication. Data rates of 1200, 2400, 4800, 9600, 19200, and 56000 are supported. The EIA-232D interface is configured as DTE, using the pins listed in Table 2-3.

**Table 2-3. TL1/X.25 Interface — EIA-232D Pin Connections**

<b>Pin</b>	<b>Description</b>
1	Protective Ground (Shield)
2	Transmitted Data
3	Received Data
4	Request to Send (RTS)*
5	Clear to Send (CTS)†
6	DCE Ready
7	Signal Ground
8	Received Line Signal Detector
15	Transmit Clock (TC)
17	Receive Clock (RC)
20	Data Terminal Ready (DTR)*

\* DTR and RTS are always on when the OLS is powered.

† The OLS will only transmit data via X.25 when CTS is on.

---

The X.25 circuits between an OLS and the OS may be transported via an X.25 packet network, dedicated private line, or circuit switched network, at the user's option.

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# OLS TL1 Message Details

# 3

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### Overview

---

This section provides detailed information about the input and output parameters for the OLS supported TL1 commands. Both autonomous messages (generated by the network element independent of any request) and command/response messages (generated in response to a request from the OS or OS user) are supported.

All alphabetic characters in the TL1 command responses and autonomous messages are output in uppercase except access identifier (*aid*), condition description (*conddescr*), alarm message description (*almmsg*), and error text. The *aid* is displayed in lowercase in the user interface, and the same is done for the TL1 interface. The *conddescr*, *almmsg*, and error text are output in mixed case for readability.

The network element does not support parameter grouping.

TL1 command entries which are to typed exactly as shown are printed in **bold type**. The responses are printed in *courier type*. Descriptive names of entry values are shown in *italic type*. `<cr>` is used to represent a carriage return, `<lf>` is used to represent a line feed, and `~` is used to represent a space. Items enclosed in brackets "[ ]" indicate optional parameters.

Commands are separated by four Function Categories (FC), and each command has been assigned with an user authorization level to check with user login IDs authorization level. The four Function Categories are :

- Configuration Management      ( C )
- Fault Management                ( F )
- Performance Monitoring        ( PM )
- Security Management            ( S )

Five user Authorization Levels (AL) for each function category, based upon login ID, are provided to control which Network Element functions a particular user may perform. They are :

- Expert (level 5)
- Privileged (level 4)
- General (level 3)
- Basic (level 2)
- Reports (level 1)

Users may execute any commands on their Function Category Authorization Level, as well as all commands at levels lower than theirs. For example, a user with Authorization Level 4 in Security Management function category ( S4 ), can execute commands listed in levels 4, 3, 2, and 1 in the Security Management function category.

The following table lists the Authorization Level and Function Category of each TL1 Message.

R2.1-OLS TL1 Message Privilege Level and Category Summary			
New this Rel.	TL1 Message	Privilege	Category
	ACT-USER	REPORTS	SECURITY
	ALW-MSG-EQPT	PRIVILEGED	SECURITY
	CANC-USER	REPORTS	SECURITY
	CPY-PRGM	PRIVILEGED	CONFIGURATION
	DLT-TADRMAP	PRIVILEGED	CONFIGURATION
	DLT-USER-SECU	PRIVILEGED	SECURITY
	ED-DAT	PRIVILEGED	CONFIGURATION
	ED-PID	REPORTS	SECURITY
	ED-USER-SECU	PRIVILEGED	SECURITY
	ENT-CID-SECU	PRIVILEGED	SECURITY
	ENT-CMS	PRIVILEGED	CONFIGURATION
	ENT-FECOM	PRIVILEGED	SECURITY
	ENT-NE-SECU	PRIVILEGED	SECURITY
	ENT-OCHAN	PRIVILEGED	CONFIGURATION
	ENT-SUPR	PRIVILEGED	CONFIGURATION
	ENT-SYS	PRIVILEGED	SECURITY
	ENT-USER-SECU	PRIVILEGED	SECURITY
	INH-MSG-EQPT	PRIVILEGED	SECURITY
	INIT-REG-ALL	GENERAL	PERFORMANCE
	INIT-REG-OLINE	GENERAL	PERFORMANCE
	INIT-SYS	GENERAL	CONFIGURATION
	OPR-ACO-ALL	REPORTS	FAULT
	OPR-EXT-CONT	GENERAL	FAULT
	RLS-EXT-CONT	GENERAL	FAULT
	RTRV-ALL	REPORTS	CONFIGURATION
	RTRV-ALM-ALL	REPORTS	FAULT
	RTRV-ALM-CMS	REPORTS	FAULT
	RTRV-ALM-COM	REPORTS	FAULT
	RTRV-ALM-ENV	REPORTS	FAULT
	RTRV-ALM-EQPT	REPORTS	FAULT
	RTRV-ALM-NTWK	REPORTS	FAULT
	RTRV-ALM-OCHAN	REPORTS	FAULT
	RTRV-ALM-OLINE	REPORTS	FAULT
	RTRV-ALM-SUPR	REPORTS	FAULT
	RTRV-AO	REPORTS	FAULT
	RTRV-ATTR-ALM	REPORTS	CONFIGURATION
	RTRV-ATTR-CONT	REPORTS	CONFIGURATION
	RTRV-ATTR-ENV	REPORTS	CONFIGURATION
	RTRV-BASELINE	REPORTS	PERFORMANCE
	RTRV-CID-SECU	REPORTS	SECURITY
	RTRV-CMS	REPORTS	CONFIGURATION
	RTRV-COND-ALL	REPORTS	FAULT
	RTRV-COND-CMS	REPORTS	FAULT
	RTRV-COND-COM	REPORTS	FAULT
	RTRV-COND-EQPT	REPORTS	FAULT

R2.1-OLS TL1 Message Privilege Level and Category Summary			
New this Rel.	TL1 Message	Privilege	Category
	RTRV-COND-OCHAN	REPORTS	FAULT
	RTRV-COND-OLINE	REPORTS	FAULT
	RTRV-COND-SUPR	REPORTS	FAULT
	RTRV-DAT	REPORTS	CONFIGURATION
	RTRV-EQPT	REPORTS	CONFIGURATION
	RTRV-FECOM	REPORTS	SECURITY
	RTRV-HDR	REPORTS	FAULT
	RTRV-LOG	REPORTS	FAULT
	RTRV-MAP-NETWORK	REPORTS	CONFIGURATION
	RTRV-MAP-RING	REPORTS	CONFIGURATION
	RTRV-NE-SECU	REPORTS	SECURITY
	RTRV-OCHAN	REPORTS	CONFIGURATION
X	RTRV-OLINE	REPORTS	CONFIGURATION
	RTRV-PM-ALL	REPORTS	PERFORMANCE
	RTRV-PM-OCHAN	REPORTS	PERFORMANCE
	RTRV-PM-OLINE	REPORTS	PERFORMANCE
	RTRV-PM-STIME	REPORTS	PERFORMANCE
	RTRV-PM-SUPR	REPORTS	PERFORMANCE
	RTRV-RELSPR	REPORTS	PERFORMANCE
	RTRV-STATE	REPORTS	FAULT
	RTRV-SUPR	REPORTS	CONFIGURATION
	RTRV-SYS	REPORTS	SECURITY
	RTRV-TH-ALL	REPORTS	PERFORMANCE
	RTRV-TH-OCHAN	REPORTS	PERFORMANCE
	RTRV-TH-OLINE	REPORTS	PERFORMANCE
	RTRV-TH-SUPR	REPORTS	PERFORMANCE
	RTRV-USER-SECU	REPORTS	SECURITY
	SET-ATTR-ALM	PRIVILEGED	CONFIGURATION
	SET-ATTR-CONT	PRIVILEGED	CONFIGURATION
	SET-ATTR-ENV	PRIVILEGED	CONFIGURATION
	SET-PM-STIME	GENERAL	PERFORMANCE
	SET-SID	PRIVILEGED	SECURITY
	SET-TH-OCHAN	GENERAL	PERFORMANCE
	SET-TH-OLINE	GENERAL	PERFORMANCE
	SET-TH-SUPR	GENERAL	PERFORMANCE
X	TEST-ALM	REPORTS	FAULT
X	TEST-AUTO-LOCAL	PRIVILEGED	FAULT
X	TEST-LED	REPORTS	FAULT
X	TEST-TLM-PAR	GENERAL	FAULT
	UPD-SYS	GENERAL	CONFIGURATION

## ACT-USER

**ACT-USER:** Activate User

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**ACT-USER:***tid:uid:ctag:pid;*

## DESCRIPTION

**ACT-USER** commands can be initiated to set up a session to the network element.

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 active login session is allowed per network element, per access channel. Any subsequent login attempt while a session is still active is denied.

This command is available only to Expert users when the channel is in the locked state.

This command is available to reports-only users, also, for all CIT, DCC or TL1 ports on the NE.

Until a successful login attempt is complete for a given network element and virtual circuit, there is no communications (autonomous or command responses) outbound from the network element, except to **DENY** unsuccessful login attempts.

If a user's 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.

A special banner message will be displayed as part of the command completion response, informing the user that the password has expired and must be updated (see the **OUTPUT FORMAT** section). The only action then allowed for the user is to change the password identifier via the **ED-PID** command.

No response will be provided for any command with an invalid syntax or parameters (other than the *UID* and *PID*), unless the same access channel has an active login session with the Gateway Network Element. In those cases only, some other invalid commands are **DENY**-ed by the GNE (refer to the **RTRV-HDR ERROR RESPONSES** section for details).

When the network element receives an **ACT-USER** command, the given login ID will initiate a login session on the network element provided that:

- Logins are enabled on the access port,
- A provisioned login ID and correct password are entered, and
- Network element login security is enabled (for non-privileged users only).

If the X.25 link to the GNE fails, all active X.25 logins are terminated without notice to the user. Similarly, all active logins to a remote network element are terminated if a communication failure occurs between the GNE and that remote network element, or if either the GNE, the targeted remote network element or an intermediate network element is reset or initialized. Communication failures include OC-N and DCC failures, unless protected in rings, between the GNE and the targeted remote network element, also.

## INPUT PARAMETERS

- tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:
- [A-Z][a-z][0-9].+-%#
- 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 this command is not allowed.
- Valid *uid* values for the **ACT-USER** command are case-sensitive alphanumeric strings of 1 to 10 characters which have been previously provisioned as valid login IDs in the network element.
- This includes login and password aging.
- ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
- pid* Private identifier. This required parameter is the confidential password authenticator for a the given *uid*. Valid *pid* values consist of case-sensitive strings of six to ten alphabetic, numeric and symbolic characters where at least two are non-alphabetic and at least one is symbolic (white space is ignored). Password strings are transmitted in unencrypted form in the **ACT-USER** command; are encrypted when stored in the network element; and are never transmitted from the network element.
- Symbolic characters:  
!"% '()\*+ - . / < > [ ] { | } ~
- Numeric characters:  
0 1 2 3 4 5 6 7 8 9
- Alphabetic characters:  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

The CenterLink User Access privilege (UAP) is different from that of the Network Element. The CenterLink UAP is used to determine what commands to show to the user. It is not sent to the Network Element. If a user specifies a CenterLink UAP which does not match their actual UAP, CenterLink will allow that user to send commands which could subsequently be denied by the Network Element due to incorrect UAP.

## OUTPUT FORMAT

If the login request completes successfully, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "uid:lastlog,attempts"
/* Lucent Technologies <system>
  <release>
  User Privilege Level: <privilege>
      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.
*/
;
```

If the network element receives a valid **ACT-USER** command and the addressed *uid* is already currently logged in on the same access channel and has the same privilege level, the network element provides a normal completion response. One of the following strings is used for the *<system>* value: FT-2000 OC-48 Large Capacity Terminal (LCT) or Optical Line System. The *<release>* string is of the form:

Release *x.y.z-type*

where *x.y.z* reflects the actual software release number and *type* can be LCT for Large Capacity Terminal (LCT) or OLS for Optical Line System.

*uap* The *<privilege>* shows the user's authorization levels (AL) for each command function category (FC) in the form of **FCAL&FCAL&FCAL&FCAL**.

Multiple FCALs are specified by using Single ampersands (&).

Commands are grouped into 4 FCs, they are Configuration Management (C), Fault Management (F), Performance Monitoring (PM), and Security Management (S).

For each FC, user can have one of the five ALs value. In the decending privilege order, they are : Expert (level 5), Privileged (level 4), General (level 3), Basic (level 2), Reports (level 1).

Following are possible FCAL values:

C[1-5] For configuration Management Authorization Level 1 through 5.

F[1-5] For Fault Management Authorization Level 1 through 5.

PM[1-5] For Performance Monitoring Authorization Level 1 through 5.

S[1-5] For security Management Authorization Level 1 through 5.

If the login request would otherwise complete successfully, but the user's password has expired, the following completion response is returned:

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

Note that if the password must be changed to login successfully, only one attempt at the ED-PID is allowed. If that attempt is denied, the network element returns to a mode in which it is expecting an ACT-USER command on that access channel.

## OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. The remainder of the output parameter variables are described below.

*uid* User Identifier. This is included in the command by the OS and repeated by the network element as a confirmation that the given user identifier is successfully logged in.

*lastlog* This is the date and time of the last session established by this *uid*. It is output in the format "MM-DD HH-MM-SS" with the date and time separated by one space. If no information is available regarding the last login session for this *uid* (for example, this is the first login session), this output field is null.

*attempts* This is the number of unsuccessful session attempts since the last successful login session on this network element.

A user is given three tries to correctly enter their login ID and password. Three tries equals one attempt. After each incorrect try, the login is denied.

If three login attempts are denied in a row on a single port, the OS is autonomously notified via **REPT EVT** message with a condition description of "INTRUSION ALERT". The intrusion alert counter is restarted when a successful login is recorded on the port, or the "intrusion alert" message is generated, or when the network element is reset.

## EXAMPLE INPUT/OUTPUT

No response message is transmitted except to convey that the login is granted (or denied). The following example shows a successful login session initiation attempt.

```
ACT-USER:LT-OLS:PeterPan:123456::N*v*rL*d3;

LT-OLS 96-07-03 16:42:11
M 123456 COMPLD
"PeterPan:07-03 16-39-27,1"
/* Lucent Technologies Optical Line System
   Release 2.1.0-OLS
   User Privilege Level: C4&F3&PM1&S2
      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 login session attempt for a user login whose password is expired.

```
ACT-USER:LT-PF-2000:PeterPan:123456::N*v*rL*d3;

LT-PF-2000 93-10-26 16:42:11
M 123456 PRTL
"PeterPan:10-25 16-39-27,1"
/* Your password has expired.  Until you change your password (ED-PID)
   you will not be allowed further access to this Network Element */
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **ACT-USER** command, also.

For invalid login tries, the error response message is transmitted only after both *uid* and *pid* are provided by the session requester, irrespective of whether the *uid*, *pid*, or both are invalid.

Exception: For an **ACT-USER** command with extra punctuation *after* the *pid* other than an end-of-message semicolon (;), no error response is returned if there are no active logins to the network element. Usually, if non-null *uid* and *pid* values are received, the network element would provide a response.

If the network element receives an **ACT-USER** command with an invalid *uid*, invalid *pid* or both, or if a different login session is already active on the access channel or logins are disabled, the following error response is returned:

```
sid date time
M ctag DENY
DENY
/* Login Failed */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**CANC-USER**

**ED-PID**

**DLT-USER-SECU**

**ENT-USER-SECU**

**RTRV-USER-SECU**

**ED-USER-SECU**

## ALW-MSG-EQPT

**ALW-MSG-EQPT:** Allow Message Equipment

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**ALW-MSG-EQPT** : *tid:aid:ctag[::,]*

## DESCRIPTION

**ALW-MSG-EQPT** commands are initiated by users to resume transmission of autonomous messages, office alarms, and/or parallel telemetry from a network element if message or alarm reporting from that network element had been inhibited.

When a network element receives an **ALW-MSG-EQPT** command from a user, the network element resumes transmission of all autonomous messages, office alarms, and/or parallel telemetry if message or alarm reporting had been inhibited.

When autonomous message reporting to the user is resumed after having been inhibited, the network element reports that autonomous message reporting is allowed in an autonomous **REPT EVT** message.

The network element reports all active alarm and status conditions to all users, depending on OS type, in autonomous (**REPT**) messages, when the reporting of autonomous messages is resumed by any user after having been inhibited.

If there are no active alarm or status conditions to report, the network element returns a normal completion (**COMPLD**) response to the **ALW-MSG-EQPT** command and report that autonomous message reporting is allowed in an autonomous **REPT EVT** message.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. The <i>aid</i> value can be one of the following values: "ALL", "OFFICE ALMS", "PAR TLM", "TL1".
<b>all</b>	This specifies that reporting for all of the parameters below is to resume on the network element.
<b>office alms</b>	This specifies that reporting of office alarms is to resume on the network element.
<b>par tlm</b>	This specifies reporting of alarms over the parallel telemetry is to resume on the network element.
<b>t11</b>	This specifies that autonomous message reporting is to resume on all TL1 ports on the network

element.

If no value is provided for *aid*, **a11** is assumed.

*ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **ALW-MSG-EQPT** request, the following completion response is returned.

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

If the network element receives an **ALW-MSG-EQPT** command from a user when transmission of all autonomous messages, office alarms, and/or parallel telemetry, had already been enabled, the network element provides a normal completion response.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
alw-msg-eqpt:LT-OLS:all:123xyz;  
  
IP 123xyz  
<  
  
LT-OLS 94-06-06,09:30:49  
M 123xyz COMPLD  
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error response section. The error responses listed there apply to the **ALW-MSG-EQPT** command, also. If an **ALW-MSG-EQPT** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

**INH-MSG-EQPT**

REPT EVT EQPT

## CANC-USER

**CANC-USER:** Cancel User

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**CANC-USER:***tid:uid:ctag;*

## DESCRIPTION

**CANC-USER** commands can be initiated to terminate a login session with the network element.

### ⇒ NOTE:

This command is available to reports-only users, also, for all CIT, DCC or TL1 ports on the NE.

When the network element receives an **CANC-USER** command, the given login identifier will terminate a login session on the network element provided that:

- A provisioned login identifier is entered, and
- The login identifier is currently active on the access channel on which the command is received.

After the **CANC-USER** command successfully completes, an autonomous message is sent, via all access channel(s) provisioned to receive such messages and on which a login session is active, to report that the login session has been terminated.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>uid</i>	User identifier. This is the unique case sensitive user login identifier for which the <b>CANC-USER</b> logout command is intended.  The <i>uid</i> value that was used to initiate a login session, even if changed or deleted by a system administrator while the current login session is still active, is the <i>uid</i> value expected in the <b>CANC-USER</b> command to terminate the login session.  Grouping and/or ranging of <i>uid</i> values for this command is not allowed.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a

string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

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

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

If the network element receives a valid **CANC-USER** command, but the addressed *uid* is not currently logged in on the access channel, or the addressed *uid* is invalid, for example, > 10 characters or no characters, the network element provides a normal completion response.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

The following example shows a successful login session termination.

```
CANC-USER:LT-OLS:PeterPan:123456;

IP 123456
<

LT-PF-2000 96-01-02 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **CANC-USER** command, also.

If the network element receives this command with a *uid* which does not match that of the current login, i.e., the active login associated with the port on which the **CANC-USER** was received, the following error response is returned:

```
sid date time
M ctag DENY
DENY
/* Privilege, Illegal User Identity, mismatch with current login
user ID */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**ACT-USER**

**ED-PID**

**DLT-USER-SECU**

**ENT-USER-SECU**

**RTRV-USER-SECU**

**ED-USER-SECU**

## CPY-PRGM

**CPY-PRGM:** Copy Program

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**CPY-PRGM:***tid::ctag::,,dest\_tid;*

## DESCRIPTION

The **CPY-PRGM** command can be initiated by users to copy the software generic contained in the memory of one network element (the source) to the memory of another network element (the destination) of the **same type**.

Copying the program (software download) occurs in the background. Once the background download is initiated, there is no mechanism provided to cancel the operation.

A maximum of 15 downloads can be in progress at any given time.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>dest_tid</i>	Destination target identifier. This is the target identifier of the destination network element to which the program will be copied. It has no default value. A valid value must be entered.

Refer to Target Identifier (TID) under TL1-Related Provisioning section for valid alphanumeric characters allowed for the value of the TID of the destination network element.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

**IMPORTANT:** Execution of this command will initiate a program copy from the local network element to the specified remote network element. This command will complete on your CIT but continue to run for 20 minutes (1 copy) to 3.5 hours (15

copies) in the background. You may log-off during this time. Use the Retrieve-Alarm-Common (RTRV-ALM-COM) command for status of execution of this command.

## OUTPUT FORMAT

If the network element fully complies with the **CPY-PRGM** request, the following normal completion response is returned.

```
IP ctag
<

      sid date time
M ctag COMPLD
;
```

Since the execution and completion of the **CPY-PRGM** command will take anywhere from about 20 minutes (for a single download) to about 3.5 hours (for 15 simultaneous downloads), the command will be executed in the background.

Once the command execution starts in the background, the system will be freed up to accept and execute other commands.

Since the software download occurs in the background and takes several minutes to a few hours, the user will be allowed to log-off during this time if the user decides to do so.

The download condition (condition type **IP-CPY-SW-PRGM**) is reported in the **REPT EVT COM** message with a condition effect of **SC** (standing condition raised).

When the software download is completed, it is reported in the **REPT EVT COM** message with a condition effect of **CL** (standing condition cleared).

The user will be able to retrieve the active standing condition of software download in progress via the **RTRV-COND-COM** command.

If the software download is successful, it is reported in the **REPT EVT COM** message with a condition type (**OC-CPY-SW-PRGM**) that indicates the successful completion of the software download and a condition effect of **TC** (transient condition).

If the software download has failed, it is reported in the **REPT EVT COM** message with a condition type (**FLT-CPY-SW-PRGM**) that indicates the failure of the software download and a condition effect of **TC** (transient condition).

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows an input and output of **CPY-PRGM** command for a PF-2000 system:

```
CPY-PRGM:LT-PF-2000::123456::,,Node5NE;

IP 123456
<

      LT-PF-2000 93-10-26 16:42:11
M  ctag COMPLD
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the *dest\_tid* is syntactically incorrect, the following error response will be returned:

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

If communications cannot be established to the *dest\_tid* because of a DCC failure condition, the following error response will be returned:

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

If the *tid* contains an unrecognizable software release, the following error response will be returned:

```

sid date time
M ctag DENY
SSTP
/* Status, SToPped, unrecognizable software */
;

```

If the *tid* is being programmed by another download program, the following error response will be returned:

```

sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, a SW download in progress */
;

```

The *dest\_tid* cannot be the *tid*. If the *tid* is entered as the *dest\_tid*, the following error response will be returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid destination TID */
;

```

If the destination tid is null, the following error response will be returned:

```

sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, destination TID must be specified */
;

```

If communications cannot be established to the Destination network element because of an invalid tid (i. e. the destination tid is not in Local Cache/DIB), the following error response will be returned:

```

sid date time
M ctag DENY
IITA
/* Input, Invalid Target identifier, unknown destination TID */
;

```

If executing this command would initiate a second software copy operation to the same *dest\_tid*, the following error response will be returned:

```

sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, a CPY-PRGM is already in
progress to the same Destination Network Element from this
Network Element */
;

```

If the *dest\_tid* is already being used as a *dest\_tid* for a copy operation from a different *f tid*, the following error response will be returned:

```

sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, a CPY-PRGM is already in
progress to the Destination Network Element from a different
Source Network Element */
;

```

If the *dest\_tid* is already being used as a *tid* for a copy operation to a different *f dest\_tid*, the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, a CPY-PRGM is already in
   progress from the Destination Network Element to a different
   Source Network Element */
;
```

Up to 15 downloads may be initiated from the *tid*. If executing this command would exceed this limit, the following error response will be returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, Too many CPY-PRGM requests */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## DLT-TADRMAP

**DLT-TADRMAP:** Delete Target\_Identifier\_Address\_Map

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available beginning in OLS Release 2.0.

## INPUT FORMAT

**DLT-TADRMAP** :*tid:aid:ctag[:[:]]:spec\_block;*

## DESCRIPTION

This command instructs a Directory Services Network Element (DSNE) to remove an entry from the network maps of all the network elements in the OSI network. The DSNE is where the network map, listing all active nodes in the network, is maintained.

When a node is removed from an OSI network, the DSNE must be updated to reflect that the node is no longer active. Entering this command at the DSNE will remove the obsolete node entry from the DSNE network map and from all **RTRV-MAP** reports at all nodes. This command will also remove any communication failure alarms related to removing the node from the network.

This command can only be executed at the DSNE and will only succeed if the communication status of the network element (NE) being deleted is "FAILED". The command **RTRV-MAP** may be used to list the communication status of a network element.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier.  Entity: All Legal Values: (ALL)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>spec_block</i>	Specific Parameter Block. Parameters within <i>spec_block</i> are specified using <i>name=value</i> syntax. The <i>spec_block</i> contains the following: TID.

**DLT\_TID** The TID identifies the network element to be removed from the DSNE's network map.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

**CAUTION:** Deleting a network element from the local network element database will result in loss of the ability to communicate with the network element. This command can only be executed from the Directory Service Network Element (DSNE).

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

```
DLT-TADRM:LT-PF-2000:all:123456:::tid=DELETED-NE;  
  
IP 123456  
<  
  
LT-PF-2000 94-03-22 16:12:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR error responses** section. The error responses listed there also apply to this command. The network element returns the following error response if the *aid* value is missing, or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

The network element returns the following error response if the TID value in the *spec\_block* is invalid.

```
sid date time
M ctag DENY
  IITA
  /* Input, Invalid Target identifier, invalid TID */
;
```

The network element returns the following error response if it is directed to a network element that is not the DSNE.

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, TID is not the DSNE */
;
```

The network element returns the following error response if the TID to be deleted is not listed in the DSNE network map.

```
sid date time
M ctag DENY
  SNVS
  /* Status, Not in Valid State, System name does not exist */
;
```

Only network elements whose communication status is "FAILED" may be removed from the network map. The network element returns the following error response if a user attempts to remove a network element whose communication status is not

"FAILED".

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State, Can only delete NEs with FAILED status */
;
```

When more than one network element is defined as the DSNE, an alarm will result. The network element returns the following error response if a user attempts to remove a network element while the network has more than one DSNE defined.

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-MAP-NTWK**

## DLT-USER-SECU

**DLT-USER-SECU:** Delete User Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**DLT-USER-SECU:***tid:uid:ctag;*

## DESCRIPTION



### CAUTION:

*Execution of this command will remove a user account. That user will no longer be able to log in.*

**DLT-USER-SECU** command is used by an appropriate administrator to delete the security parameters associated with a user. This is applicable where a user account is being closed. This command can not be executed by non-privileged users when the TL1 security feature is on. Expert user accounts cannot be deleted.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>uid</i>	This is the User Identifier of a user. Valid values are a case-sensitive alphanumeric string of 1 to 10 characters. Only a single <i>uid</i> is supported in this command.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command. Changes to login ID information will result in the changed login ID being logged off (if the login ID is logged in).

## OUTPUT FORMAT

If the network element fully complies with the delete user security request, the following normal completion response is returned:

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

If the *uid* is currently logged into the network element through any of the communication interface ports (DTE, DCE, or X.25), when this command is successfully executed, the user identified by the *uid* is disconnected, and the network element responds to the user who entered the **DLT-USER-SECU** with the completion message (shown above).

If the network element receives a **DLT-USER-SECU** command containing a non-existing *uid*, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
DLT-USER-SECU:LT-PF-2000:kjlee:123456;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives a **DLT-USER-SECU** command with an invalid *uid* (user identifier), the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UID */
;
```

Two expert user logins must exist in the network element at all times. If the user attempts to delete an expert user login, the following error response is returned:

```
sid date time
M ctag DENY
PIFC
/* Privilege, Illegal Field Control
Attempting to delete an expert login. Two expert user
logins are required at all times.
*/
;
```

## RELATED TL1 COMMANDS/MESSAGES

**ENT-USER-SECU**

**ED-USER-SECU**

**RTRV-USER-SECU**

## ED-DAT

**ED-DAT:** Edit Date\_and\_Time

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
ED-DAT :tid::ctag::[date][,time][:spec_block];
```

## DESCRIPTION



### CAUTION:

*Execution of this command may corrupt performance monitoring data.*

**ED-DAT** commands can be initiated by users to request the network element to change its system date and time to a given value.

The activation time of some pending commands may be skipped or repeated as a result of changing the system date or time of the network element. Appropriate actions should be taken to ensure the proper execution of these commands.

Delayed activation is not allowed for this command.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>date</i>	Date. This is the requested <i>date</i> in the following format: YY-MM-DD, where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31.
<i>time</i>	Time. This is the requested <i>time</i> in the following format: HH-MM-SS, where HH is the hour in a 24 hour format ranging from 00 to 23; MM is the minute ranging from 00 to 59; and SS is the second ranging from 00 to 59. If not specified, <i>time</i> remains the same.
<i>spec_block</i>	Specific Parameter Block. The system level attributes to be modified are specified inside the <i>spec_block</i> . Parameters within

*spec\_block* are specified using a *name=value,name=value,...* type construct with no constraints on the order of the arrangement of parameters. Constructs such as *name1=value1, name2=, name3=, name4=, name5=value5,...* are acceptable and in this example only the parameters *name1* and *name5* will be attempted to be changed at the NE. If the current value of the parameter *name1* is already *value1* in the above example, then *name1* will not be changed.

For the **ED-DAT** command, the *spec\_block* may contain one or all of more of the following parameters:

<i>tz</i>	Standard Time Zone. <i>tz</i> is a string of 3 or less characters.
<i>strtdst</i>	Start Daylight Savings Time. <i>strtdst</i> is a date in the following format: MM-DD.
<i>stopdst</i>	Stop Daylight Savings Time. <i>stopdst</i> is a date in the following format: MM-DD.
<i>dstz</i>	Daylight Savings Time Zone. <i>dstz</i> is a string of 3 or fewer characters.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command may corrupt performance monitoring data.

## OUTPUT FORMAT

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

## OUTPUT PARAMETERS

<i>sid</i>	Source identifier. This is the system name.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day). If this message is successful <i>date</i> equals the input date.
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds). If this message is successful <i>time</i> equals the input time plus the time (seconds) required to send the response message.
M	This indicates that the output message is generated in response to a manual command.

*ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

COMPLD This indicates that the command has been completed.

## EXAMPLE INPUT/OUTPUT

```
ed-dat:LT-OLS::xyz123::96-01-06,09-30-45;  
  
IP xyz123  
<  
  
LT-OLS 96-01-06,09:30:49  
M xyz123 COMPLD  
;0
```

### ⇒ NOTE:

The below single-line command (**bold type**) is presented in more than one line for ease of reading.

```
ed-dat:LT-PF-2000::xyz123::94-06-06:tz=est,strtdst=04-04,  
stopdst=10-31;  
  
IP xyz123  
<  
  
LT-PF-2000 94-06-06,09:30:49  
M xyz123 COMPLD  
;0
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error response section. The error responses listed there apply to the **ED-DAT** command, also.

If the network element receives an **ED-DAT** command with an incorrectly formatted date or time, the following error response is returned:

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

The value of DD is also checked for sanity with MM (for example, February 30 can not exist), and for sanity with YY for MM-DD equaling 02-29 for leap years. Also, values of HH $\geq$ 24, MM $>$ 59, and/or SS $>$ 59 are invalid. If an error of this type occurs, the following error response is returned:

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

If the network element receives an **ED-DAT** command with an incorrectly formatted tz, strtdst, stopdst or dstz *spec\_block* parameter, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## ED-PID

**ED-PID:** Edit Private\_Identifier (Password)

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**ED-PID:***tid:uid:ctag::old\_pid,new\_pid;*

## DESCRIPTION

**ED-PID** commands can be initiated to change the user's password (PID) on the network element.

When the network element receives an **ED-PID** command, the password associated with the given login identifier will be changed on the network element provided that:

- The login identifier is currently active on the access channel on which the command is received;
- The *old\_pid* provided matches the current password for the login identifier; and
- The *new\_pid* provided satisfies the password requirements of the network element.
- At least seven (7) calendar days have passed since the last password change for that login.

If password aging is enabled, a non-Privileged user may not change a password unless at least seven (7) calendar days have passed since the last password change of that login.

After the successful completion of an **ENT-NE-SECU** command, a privileged user may change the password only during that session. Any attempt to change a password after ending the session when less than seven days have expired shall also be denied.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>uid</i>	User identifier. This is the unique case-sensitive user login identifier for which the <b>ED-PID</b> login command is intended.  Grouping and/or ranging of <i>uid</i> values for this command is not allowed.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a

string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

- old\_pid* Old private identifier (password). This is included in the command by the user and must exactly match the current PID for the login identifier.
- new\_pid* Passwords consists of a string of alphabetic, numeric and symbolic characters that contains a minimum of six characters and a maximum of ten characters, where at least two are non-alphabetic and one is symbolic. Passwords are case sensitive.

Password strings will be encrypted when stored in the network element. They will not be encrypted when transmitted between the network element and the CIT, OS or dumb terminal. Passwords are never transmitted from the network element to the PC or a TL1 channel.

### ⇒ NOTE:

The *new\_pid* value must differ from the *old\_pid* value in at least one character.

Symbolic characters:

!"% '()\*+ - . / < > [ ] { | } ~

Numeric characters:

0 1 2 3 4 5 6 7 8 9

Alphabetic characters:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the password change request completes successfully, and transitions the state of the login procedure from the "Password\_Expired" state to the "Login\_Active" state, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
/* Lucent Technologies <system>
   <release>
   User Privilege Level: <privilege>
           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.
*/
;
```

One of the following strings is used for the <system> value: FT-2000 OC-48 Large Capacity Terminal (LCT) or Optical Line System. The <release> string is of the form:

Release x.y.z-type

where x.y.z reflects the actual software release number and type can be LCT for Large Capacity Terminal (LCT) or OLS for Optical Line System.

The <privilege> shows the user's authorization levels (AL) for each command function category (FC) in the form of **FCAL&FCAL&FCAL&FCAL**.

Multiple FCALs are specified by using Single ampersands (&).

Commands are grouped into 4 FCs, they are Configuration Management (C), Fault Management (F), Performance Monitoring (PM), and Security Management (S).

For each FC, user can have one of the five ALs value. In the decending privilege order, they are : Expert (level 5), Privileged (level 4), General (level 3), Basic (level 2), Reports (level 1).

Following are possible FCAL values:

C[1-5] For configuration Management Authorization Level 1 through 5.

F[1-5] For Fault Management Authorization Level 1 through 5.

PM[1-5] For Performance Monitoring Authorization Level 1 through 5.

S[1-5] For security Management Authorization Level 1 through 5.

The above response is provided by the network element only if the **ED-PID** command is being used to update an expired password upon user login (**ACT-USER**). Otherwise, the following response is provided by the network element. If the password change request completes successfully, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

The following example shows a successful password change operation.

```
ED-PID:LT-PF-2000:PeterPan:123456::soup3r+,8_6oober;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **ED-PID** command, also.

If the network element receives an **ED-PID** command with a login identifier specified by *uid* that is not currently logged in on the access channel over which the command is received, the following error response is returned to the OS:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, user ID not logged in */
;
```

If the network element receives an **ED-PID** command with an *old\_pid* value that does not match the currently provisioned *pid* for the associated user login identifier, the following error response is returned to the OS:

```
sid date time
M ctag DENY
  PIUI
  /* Privilege, Illegal User Identity, invalid OLD_PID */
;
```

If the network element receives an **ED-PID** command with a missing *new\_pid*, or a *new\_pid* that does not meet the the required attributes of a valid user login identifier password, the following error response is returned to the OS:

```
sid date time
M ctag DENY
  PIUI
  /* Privilege, Illegal User Identity, invalid NEW_PID */
;
```

If the network element receives an **ED-PID** command with a *new\_pid* value equal to the *old\_pid* value, the following error response is returned to the OS:

```
sid date time
M ctag DENY
  PIUI
  /* Privilege, Illegal User Identity, NEW_PID same as OLD_PID */
;
```

If the network element receives an **ED-PID** command before the password aging time period has expired, the following error response is returned to the OS:

```
sid date time
M ctag DENY
  PIUI
  /* Privilege, Illegal User Identity, insufficient time for
  password aging */
;
```

## RELATED TL1 COMMANDS/MESSAGES

ACT-USER

CANC-USER

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

ED-USER-SECU

## ED-USER-SECU

**ED-USER-SECU:** Edit User Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
ED-USER-SECU:tid:uid:ctag::[new_uid],[new_pid],[uap][:  
keyword_block];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

**ED-USER-SECU** command is used by an appropriate administrator to edit the security parameters associated with a user. This command enables a user with privilege *s4* or higher (Security Management Authorizaiton Level equals to Privilege or higher), to edit the login ID, password, and/or user privileges of any non-expert user, and to alter a temporary visitor login. The user executing the command may not edit any of the user's own login parameters, including *uid*, *pid*, and *uap*. Only an Expert user is allowed to edit the login ID and/or password of the other Expert user.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>uid</i>	User Identifier. Its valid values are a case-sensitive alphanumeric string of 1 to 10 characters. This is the <i>uid</i> to be changed and/or whose password and/or privilege level are to be changed.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>new_uid</i>	New User Identifier. Its valid values are a case-sensitive alphanumeric string of 1 to 10 characters. If omitted this parameter is not changed.

*new\_pid*

If omitted, this parameter is not changed. Passwords consists of a string of alphabetic, numeric and symbolic characters that contains a minimum of six characters and a maximum of ten characters, where at least two are non-alphabetic and one is symbolic. Passwords are case sensitive.

Password strings will be encrypted when stored in the network element. They will not be encrypted when transmitted between the network element and the CIT, OS or dumb terminal. Passwords are never transmitted from the network element to the PC or a TL1 channel.

Symbolic characters:

!"% '()\*+-. /<>[] '{|}~

Numeric characters:

0 1 2 3 4 5 6 7 8 9

Alphabetic characters:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z

*uap*

If omitted, the User Access Privilege is not changed.

User Access Privilege. It specifies the user's authorization levels (AL) for each command function category (FC) in the form of **FCAL&FCAL&FCAL&FCAL**.

Multiple FCALs are specified by using single ampersands (&).

Commands are grouped into 4 FCs, which are Configuration Management (C), Fault Management (F), Performance Monitoring (PM), and Security Management (S). The user access privilege shall be specified in the order of FCs as **Cw&Fx&PMY&Sz**.

For each FC, user can be assigned with one of the four ALs value. In the descending privilege order, they are : Privileged (level 4), General (level 3), Basic (level 2), and Reports (level 1). Expert is not allowed for this parameter since Expert users cannot be created in the NE. This is a divergence from TR-833, Issue 5.

Following are possible FCAL values:

C[1-4] For configuration Management Authorization Level 1 through 4.

F[1-4] For Fault Management Authorization Level 1 through 4.

PM[1-4] For Performance Monitoring Authorization Level 1 through 4.

S[1-4] For security Management Authorization Level 1 through 4.

See the **ACT-USER** command for more information regarding the *uap* values.

*keyword\_block* Keyword Parameter Block. This parameter field is used for modification of temporary login attributes. Temporary login attributes are applicable to non-Expert users only. Parameters within the *keyword\_block* are specified using a name defined construct of: **PARAMETER=value** in a comma separated list.

For the **ED-USER-SECU** command, the *keyword\_block* may contain neither or both of the following parameters:

- TYPE** If a temporary login is desired, this parameter must equal "VISITOR".
- visitor** Visitor Login. This indicates that this login is assigned for temporary access to the network element.
- EXPDAT** Expiration Date. This is the requested **EXPDAT** in the following format: YY-MM-DD, where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31.
- The expiration date must be set if **TYPE=visitor**.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command. Changes to login ID information will result in the changed login ID being logged off (if the login ID is logged in).

NOTE: User access privilege (UAP) must be entered in the format of Cw&Fx&PM<sub>y</sub>&Sz. Where: "&" is the delimiter; C (configuration), F (fault), PM (performance monitoring), S (security) are keywords used for the command function categories; w, x, y, z are values 1 to 4 for user authorization level in ascending user privilege, with 1 for the lowest user privilege. For example, C3&F2&PM4&S1 is a valid UAP.

## OUTPUT FORMAT

If the network element fully complies with the edit user security request, the following normal completion response is returned:

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

If the *uid* is currently logged into any network element through any of the communication interface ports (DTE, DCE, or X.25), when this command is successfully executed, regardless of altering any or none of the login parameters, the

user identified by the *uid* is disconnected, and the network element responds to the user who entered the **ED-USER-SECU** with the completion message (shown in the previous screen display).

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

The following example changes the current *uid*, **kjlee**, to a *new\_uid*, **ilf**, and assigns **ilf** a *new\_pid* and an *uap*.

```
ed-user-secu:LT-PF-2000:kjlee:123456::ilf,pass12+, ,C1&F1&PM3&S1;  
  
IP 123456  
<  
  
LT-PF-2000 97-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives an **ED-USER-SECU** command from a user trying to change his or her own *uid* (user identifier) value, the following error response is returned:

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

If the network element receives an **ED-USER-SECU** command from a users trying to change their own pid value, the following error response is returned:

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

If the network element receives an **ED-USER-SECU** command from a users trying to change their own *uap* (user access privilege) value, the following error response is returned:

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

If the network element receives an **ED-USER-SECU** command with an invalid *uid* (user identifier) value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid UID */
;
```

If the network element receives an **ED-USER-SECU** command with a *new\_uid* (new user identifier) that matches an existing *uid* (user identifier), other than the one specified in the *uid* field, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, duplicate NEW_UID */
;
```

If the network element receives an **ED-USER-SECU** command with an invalid

*new\_uid* (new user identifier) value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid NEW_UID */
;
```

If the network element receives an **ED-USER-SECU** command with an invalid *new\_pid* (password) value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid NEW_PID */
;
```

If the network element receives an **ED-USER-SECU** command with a **TYPE** other than **visitor**, the following error response is returned:

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

If the network element receives an **ED-USER-SECU** command with an invalid *EXPDAT*, the following error response is returned:

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

If the network element receives an **ED-USER-SECU** command without an **EXPDAT**

when **TYPE** is specified, or without a **TYPE** when **EXPDAT** is specified in the *keyword\_block*, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**ED-PID**

**DLT-USER-SECU**

**ENT-USER-SECU**

**RTRV-USER-SECU**

## ENT-CID-SECU

**ENT-CID-SECU:** Enter Channel\_Identifier Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

```
ENT-CID-SECU:tid:aid:ctag::[:spec_block];
```

## DESCRIPTION

The **ENT-CID-SECU** command is initiated to set port security parameters for X.25, DTE, DCE, DCC, and SER\_TLM1 ports.

When the **ENT-CID-SECU** command is issued to change the OS type of a port that is enabled and currently active, the session is terminated.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access Identifier. This is the address of the communication ports for which parameters need to be set. A null value is not allowed.  Entity: Single Port (COM) Legal Values: (DCE, DTE, DCC, X25, SER_TLM1)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>spec_block</i>	Specific block. This optional parameter field is used for most basic capabilities of the <b>ENT-CID-SECU</b> command. Parameters set within the specific block are positionally independent and are set using a construct such as: <i>PARAMETER=value</i> in a comma-separated list. The specific block may have zero or more of the following parameters set within it. Furthermore, each parameter listed below may appear at most once within the specific block for a single <b>ENT-CID-SECU</b> command.
TMOUT	This parameter sets the time out interval for the DCE, DTE, and DCC ports. It has an integer value in the range 0-999 minutes. A value of 0 disables the time out mechanism. When a null value is provided, TMOUT is unchanged.

PORTACC	This parameter sets the port access for DTE, DCC or SER_TLM1 port and has one of the following vaules: "ENABLE" or "DISABLE". When port access to a port becomes disabled, any active session is terminated. When the port access is disabled on the DTE port, the DTR and RTS leads should be reset. Likewise, when the port access is enabled on the DTE port, the DTR and RTS leads should be asserted.
BAUDRATE	This parameter sets the baud rate of the DTE port or DCE port if the port type is <b>tl1</b> . It has one of the following values: "1200", "2400", "4800", or "9600".
CHAN	This parameter sets the channel type of the X.25 port and has one of the following values: "PVC_1", "PVC_2", "TBL_1", "TBL_2", "TBL_3", "TBL_4", "TBL_5", "TBL_6", "TBL_7", "TBL_8", "TBL_9", "TBL_10", "TBL_11", "TBL_12", "TBL_13", "TBL_14", "TBL_15", or "TBL_16". TBL_{1-16} values are the provisioning table entries of the TL1 calling address table. This parameter has no default value.
OSTYPE	<p>This parameter sets the OS type for the virtual circuit of the X.25 port. It has one of the following values (MT, MA, CMDR, OTHR, RST) for <b>pvc</b>; and (MT, MA, CMDR, OTHR, RST, NONE) for <b>tbl</b> (i.e the table entry corresponding to X.25 switched channels [<b>svc</b>] of X.25).</p> <p>MT means maintenance, MA means memry-admin, CMDR means cmd-resp, OTHR means other, NONE means none, and RST means restoration.</p>
CALLADDR	This parameter sets the calling address of the OS for a table entry <b>tbl</b> corresponding to the <b>svc</b> of the X.25 port if the OS type is other than NONE. It has a value of a string of digits up to a maximum of 15 digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command. All active users on the specified port(s) will be automatically logged off when this command is executed.

## OUTPUT FORMAT

If the network element fully complies with the **ENT-CID-SECU** request, the following normal completion response is returned.

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

If the **ENT-CID-SECU** command does not alter the existing attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown above).

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows an **ENT-CID-SECU** command that provisions security parameter for a **tbl** entry corresponding to a X.25 **svc**.

### ⇒ NOTE:

The below single-line command (**bold** type) is presented in more than one line for ease of reading.

```
ENT-CID-SECU:LT-PF-2000:x25:123456:::CHAN=tbl_3,OSTYPE=MA,  
CALLADDR=0123456789;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows an **ENT-CID-SECU** command that provisions security parameters for a DTE port.

### ⇒ NOTE:

The below single-line command (**bold** type) is presented in more than one line for ease of reading.

```
ENT-CID-SECU:LT-PF-2000:dte:123456:::TMOUT=10,PORTACC=enable,  
BAUDRATE=9600;
```

```
IP 123456  
<
```

```
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows an **ENT-CID-SECU** command that provisions security parameters for a DCE port.

```
ENT-CID-SECU:LT-PF-2000:dce:123456:::TMOUT=10;
```

```
IP 123456  
<
```

```
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

The following example shows an **ENT-CID-SECU** command that provisions security parameters for a SER\_TLM1 port.

```
ENT-CID-SECU:LT-PF-2000:SER_TLM1:123456:::PORTACC=enable;
```

```
IP 123456  
<
```

```
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the command is received with an invalid aid, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

If an **ENT-CID-SECU** command is received with an invalid TMOU parameter, the following error response is returned:

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

If an **ENT-CID-SECU** command is received with an invalid PORTACC parameter, the following error response is returned:

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

If an **ENT-CID-SECU** command is received with an invalid BAUDRATE parameter, the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid BAUDRATE parameter */
;

```

If an **ENT-CID-SECU** command is received with an invalid CHAN parameter, the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid CHAN parameter */
;

```

If an **ENT-CID-SECU** command is received with an invalid OSTYPE parameter, the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid OSTYPE parameter */
;

```

If an **ENT-CID-SECU** command is received with an invalid CALLADDR parameter, the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, invalid CALLADDR parameter */
;

```

If an **ENT-CID-SECU** command is received with a TMOUT which does not apply to given AID, the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, TMOUT does not apply to given AID*/
;

```

If an **ENT-CID-SECU** command is received with a **PORTACC** which does not apply to given AID, the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, PORTACC does not apply to given AID*/
;

```

If an **ENT-CID-SECU** command is received with a **BAUDRATE** specified for **PORTTYPE=cit** or for port other than **dte** or **dce** the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, BAUDRATE does not apply to given AID*/
;

```

If an **ENT-CID-SECU** command is received with a **CHAN** specified for a port other than **X.25** the following error response is returned:

```

sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, CHAN does not apply to given AID*/
;

```

If an **ENT-CID-SECU** command is received with an **OSTYPE** specified for a port other than **x25** the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, OSTYPE does not apply to given AID*/
;
```

If an **ENT-CID-SECU** command is received with a **CALLADDR** specified for **CHAN** other than **tb1-1-16** the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, CALLADDR does not apply to given CHAN*/
;
```

If an **ENT-CID-SECU** command is received with a valid **TMOUT** but has an **AID** of **x25**, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, TMOUT does not apply to given AID */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## ENT-CMS

**ENT-CMS:** Enter Customer\_Maintenance\_Signal

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
ENT-CMS:tid:aid:ctag:[:[type][[:pst[,sst]]]];
```

## DESCRIPTION

**ENT-CMS** command messages can be initiated by a user to request OLS to provision various parameters of the Customer Maintenance Signal (CMS) ports.

When OLS receives an **ENT-CMS** command from the user, OLS will provision the appropriate CMS according to the parameter settings in the command.

The provisioned values remain active until modified (for example, by another command).

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. Access identifier. This is the address of the facility for which this command is intended.  Entity: CMS Port [End Terminals] Legal Values: (CMS)-(ALL,1A,2A,3A,4A)  Entity: CMS Port [Repeaters] Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.
<i>pst</i>	Primary state. This parameter must have no value.
<i>sst</i>	Secondary state. This parameter is used to set the secondary state of the OLS CMS port(s) addressed by the <i>aid</i> field for the purpose of defining the signal monitoring state of the CMS port in the <i>mux</i> (that is, towards the Optical line) direction <b>only</b> . The secondary state parameter is position defined.

**⇒ NOTE:**

Currently, OLS does not support the setting of the *primary state* using the **ENT-CMS** command to define the signal monitoring state of the CMS port in the *demux* (from the optical line) direction.

OLS allows for user provisioning of 2 basic states: AUTO and NMON. When an OLS CMS port *sst* is provisioned in the **AUTO** state, it will automatically transition to the in-service (**IS**) state upon any detection on the low speed port of a valid input in the *mux* direction. When an OLS CMS port *sst* is provisioned in the **NMON** state, the monitoring of incoming signals is disabled in the *mux* direction. The port exits this state to the **AUTO** state through either another **ENT-CMS** or **UPDATE** command. If provided at all, the *sst* must have one of the following two values.

**oos-MA-AS** Out of service, memory administration, assigned. This *sst* value places the port(s) in the **AUTO** state (in the terminology of OLS). This is the default *sst* value.

**oos** Out of service ("for Memory Administration" implied). This *sst* value places the port(s) in the **NMON** state (in the terminology of OLS).

If no value is provided for this parameter, its value is left unchanged.

A (non-provisionable) third secondary port state is supported by OLS, **IS** ("in service"). OLS CMS ports in the **AUTO** will automatically transition to the **IS** state upon detecting a valid incoming signal (towards the high speed line) of the facility type they support.

**CENTERLINK CIT TEXT**

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

**OUTPUT FORMAT**

If the network element fully complies with the provisioning request, the following output message is returned:

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

**OUTPUT PARAMETERS**

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

The following example provisions the OLS CMS port "cms-1a" provisioning as follows:

- Secondary state of OOS-MA-AS

```
ent-cms:LT-OLS:cms-1a:123456:::,OOS-MA-AS;  
  
IP 123456  
<  
  
LT-OLS 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

In addition to the non-message-specific error responses listed in the **RTRV-HDR** error responses description, the following error responses are listed in the order and priority that OLS checks for each condition.

If the network element receives this command with any extra (beyond the input format specification above) command parameter blocks (:), parameters (not supported by OLS, delimited by ","), or termination characters (;), the following error response is returned:

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

If the network element receives this command with the same parameter specified more than once, the following error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s) multiply
defined */
;
```

If OLS receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

If the network element receives this command with a *primary state* value that is not supported by the network element, the following error response is returned:

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

If the network element receives this command with a *secondary state* value that

is not supported by the network element, the following error response is returned:

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

If the network element receives an **ENT-CMS** command with otherwise valid *spec\_block* parameter(s), but for which, **CMS** and the parameter(s) are not in agreement, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, parameter settings inconsistent with
modifier value */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-CMS**

## ENT-FECOM

**ENT-FECOM:** Enter Far\_End\_Communications  
 The privilege level for this command is PRIVILEGED.  
 The OSI category for this command is SECURITY.  
 This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**ENT-FECOM:***tid::ctag[::spec\_block];*

## DESCRIPTION

The **ENT-FECOM** command can be initiated by users to enable/disable remote access capabilities over the DCC and alarms associated with DCC failures.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>spec_block</i>	Specific Parameter Block. The system level attributes to be modified are specified inside the <i>spec_block</i> . Parameters within <i>spec_block</i> are specified using a <i>name=value,name=value,...</i> type construct with no constraints on the order of parameters. Constructs such as <i>name1=value1,name2=, name3=, name4=, name5=value5,...</i> are acceptable and in this example only the parameters <i>name1</i> and <i>name5</i> will be changed at the network element. If the current value of the parameter <i>name1</i> is already <i>value1</i> in the above example, <i>name1</i> will not be changed.

For the **ENT-FECOM** command, the *spec\_block* may contain one or more of the following parameters:

<b>RAR</b>	Remote Activity Reporting. The <b>RAR</b> is the reporting of activity from other network elements in the ring via the <b>RTRV-ALM-NET</b> command and the FE ACTY LED is enabled or disabled. The allowable values for this parameter are: "ENABLED" or "DISABLED".
<b>ROA</b>	Remote Office Alarm. If enabled, the remote office alarms will also cause local alarms (alarm contacts). If

disabled, the remote office alarms will not cause local office alarms. The allowable values for this parameter are: "ENABLED" or "DISABLED".

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command.

## OUTPUT FORMAT

If the network element fully complies with the **ENT-FECOM** request, the following normal completion response is returned.

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

If the **ENT-FECOM** command does not alter the existing attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown above).

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows a command **ENT-FECOM**:

```
ent-fecom:LT-PF-2000::123456:::RAR=Enabled,ROA=Enabled;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The network element returns the following error response if the *RAR* value is invalid.

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

The network element returns the following error response if the *ROA* value is invalid.

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-FECOM**

## ENT-NE-SECU

**ENT-NE-SECU:** Enter Network\_Element Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**ENT-NE-SECU:***tid::ctag::spec\_block;*

## DESCRIPTION

The **ENT-NE-SECU** command can be initiated by users to set the global security parameters of the system, like password aging period, login aging period and logins allowed.

When logins are disallowed using this command, any currently active non-Expert session will immediately be disconnected.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>spec_block</i>	Specific Parameter Block. The system level attributes to be modified are specified inside the <i>spec_block</i> . Parameters within <i>spec_block</i> are specified using a <i>NAME=value,NAME=value,...</i> type construct with no constraints on the order of parameters. Constructs such as <i>NAME1=value1,NAME3=value3,...</i> are acceptable and in this example only the parameters <i>NAME1</i> and <i>NAME3</i> will be changed at the network element. If the current value of the parameter <i>NAME1</i> is already <i>value1</i> in the above example, <i>NAME1</i> will not be changed.  For the <b>ENT-NE-SECU</b> command, the <i>spec_block</i> must contain one or more of the following parameters:  <b>ALW_UID</b> This parameter allows or disallows non-expert logins into the network element. This parameter can take one of the two values: "YES" or "NO". If this

parameter is omitted (null), the currently effective value remains in effect.

When logins are disallowed using this command, any currently active non-Expert session will immediately be disconnected.

**PAGE** Password Aging Interval. The **PAGE** parameter specifies the period in days after which the user has to change the password of his or her account. It can take a value between 7 and 999 days, or 0, which disables the password aging mechanism. If the parameter is omitted (null), the currently effective value remains in effect.

**UOUT** The **UOUT** parameter specifies the period in days during which a user had to login at least once to retain the login. It can take a value between 7 and 999 days, or 0, which disables the login aging mechanism. If the parameter is omitted (null), the currently effective value remains in effect.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command. All active users on the specified port(s) will be automatically logged off when this command is executed.

## OUTPUT FORMAT

If the network element fully complies with the **ENT-NE-SECU** request, the following normal completion response is returned.

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

If the **ENT-NE-SECU** command does not alter the existing attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown above).

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows an **ENT-NE-SECU** command that provisions the network element's security parameters.

```
ent-ne-secu:LT-PF-2000::CTAG::ALW_UID=Yes,PAGE=60,UOUT=90;  
  
IP CTAG  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M CTAG COMPLD  
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If an **ENT-NE-SECU** command is received with an invalid *alw\_uid* parameter, the following error response is returned:

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

If an **ENT-NE-SECU** command is received with an invalid *page* parameter, the following error response is returned:

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

If an **ENT-NE-SECU** command is received with an invalid *uout* parameter, the following error response is returned:

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

If an **ENT-NE-SECU** command is received with a null *spec\_block* parameter, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-NE-SECU**

## ENT-OCHAN

**ENT-OCHAN:** Enter Optical\_Channel

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**ENT-OCHAN:** *tid:aid:ctag:[[:type][[:pst]]];*

## DESCRIPTION

**ENT-OCHAN** command messages can be initiated by a user to request OLS to provision various parameters of the optical channels.

When OLS receives an **ENT-OCHAN** command from the user, OLS will provision the appropriate optical channel according to the parameter settings in the command.

The provisioned values remain active until modified (for example, by another TL1 command **ENT-OCHAN** command).

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the facility for which this command is intended.  Entity: Optical Channel  Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.
<i>pst</i>	Primary state. This parameter is used to set the primary state of the OLS optical channel addressed by the <i>aid</i> field for the purpose of defining the signal monitoring state of the optical channel. The primary state parameter is position defined.

**⇒ NOTE:**

As optical channels are unidirectional entities, OLS supports the setting of the *primary state* to define the signal monitoring state of the optical channels only.

OLS allows for user provisioning of 2 basic states: `AUTO` and `NMON`. When an OLS optical channel is provisioned in the `AUTO` state, it will automatically transition to the in-service (`IS`) state upon any detection on the low speed port of a valid input in the *demux* direction. `AUTO` is the default state. When an OLS optical channel *pst* is provisioned in the `NMON` state, the monitoring of incoming signals is disabled in the *demux* direction. The port exits this state to the `AUTO` state through either another `ENT-OCHAN` command. The *pst* may be null or have one of the following two values.

`oos-MA-AS` Out of service, memory administration, assigned. This *pst* value places the port(s) in the `AUTO` state (in the terminology of OLS). This is the default *pst* value.

`oos` Out of service ("for Memory Administration" implied). This *pst* value places the port(s) in the `NMON` state (in the terminology of OLS).

**⇒ NOTE:**

A (non-provisionable) third primary port state is supported by OLS, `IS` ("in service"). OLS optical channels in the `AUTO` will automatically transition to the `IS` state upon detecting a valid signal of the facility type they support.

**CENTERLINK CIT TEXT**

The following text will appear on the CenterLink CIT screen below the input form and above the `EXECUTE` and `CLEAR` buttons:

CAUTION: Execution of this command may affect service and/or corrupt performance monitoring data.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

**OUTPUT FORMAT**

If the network element fully complies with the provisioning request, the following output message is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

The following example provisions the OLS optical channel "ochan-1a-1" provisioning as follows:

- Primary state of OOS-MA-AS

```
ent-ochan:LT-OLS:ochan-1a-1:123456:::OOS-MA-AS;  
  
IP 123456  
<  
  
LT-OLS 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

In addition to the non-message-specific error responses listed in the **RTRV-HDR** error responses description, the following error responses are listed in the order and priority that OLS checks for each condition.

If the network element receives this command with any extra (beyond the input format specification above) command parameter blocks (:), parameters (not supported by OLS, delimited by ","), or termination characters (;), the following error response is returned:

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

If the network element receives this command with the same parameter specified more than once, the following error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s) multiply
defined */
;
```

If OLS receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

If the network element receives this command with a *primary state* value that is

not supported by the network element, the following error response is returned:

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

If the network element receives an **ENT-OCHAN** command with otherwise valid *spec\_block* parameter(s), but for which, **OCHAN** and the parameter(s) are not in agreement, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent with
modifier value */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-OCHAN**

## ENT-SUPR

**ENT-SUPR:** Enter Supervisory

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
ENT-SUPR:tid:aid:ctag:[:[type]][:[spec_block]]];
```

## DESCRIPTION

**ENT-SUPR** command messages can be initiated by a user to request OLS to provision various parameters of the supervisory channel.

When OLS receives an **ENT-SUPR** command from the user, OLS will provision the appropriate supervisory channel according to the parameter settings in the command.

The provisioned values remain active until modified (for example, by another command).

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the facility for which this command is intended.  Entity: Supervisory Channel (End Terminals) Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)  Entity: Supervisory Channel [Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.
<i>spec_block</i>	Specific block. Parameters set within the specific block are positionally independent and are set using a construct such as: <b>PARAMETER=value</b> in a comma-separated list. The specific block may have zero or more of the following parameters set within it. Furthermore, each parameter listed below may appear at most once within the specific block for a single command.

For each of the parameters below there is listed one or more parameter values. If a particular parameter does not appear in the *spec\_block*, its value remains unchanged as a result of this command. The use of the term "null" in the descriptions below implies that the parameter does not appear in the command.

*NTFCNCDE* Notification code. The *NTFCNCDE* parameter is used to set the alarm level of supervisory channel failures serviced by the addressed (*aid*) supervisory channel.

If included in the *spec\_block* at all, this parameter must have one of the following values: "MJ\_Prompt", "MN\_Deferred", "NA\_No\_Alarm", "NR\_No\_Report", or "NO\_Not\_Indicated".

**MJ\_Prompt** Major/Prompt. If provisioned as **MJ\_Prompt**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of Prompt (for SDH) or MJ (for SONET) being generated and sent to the user.

**MN\_Deferred** Minor/Deferred. If provisioned as **MN\_Deferred**, a facility failure on the addressed port will result in an autonomous REPT ALM message with a notification code of Deferred (for SDH) or MN (for SONET) being generated and sent to the user.

**NA\_No\_Alarm** Not Alarmed/No Alarm. If provisioned as **NA\_No\_Alarm**, a facility failure on the addressed port will result in an autonomous REPT EVT message being generated and sent to the user.

**NR\_No\_Report** Not Reported/No Report. If provisioned as **NR\_No\_Report**, a facility failure on the addressed port will result in no autonomous message being generated and sent to the user. If this condition remains active when an appropriate RTRV-COND TL1 message is received by the network element, it will be reported in the response.

**NO\_Not\_Indicated** Not indicated. If provisioned as **NO\_Not\_Indicated**, an

optical low speed facility failure on the addressed port will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise, will be generated and sent to the user.

*SDTHR*

Signal degrade threshold. This parameter is used to set the signal degrade threshold in terms of Bit Error Rate (BER) for the supervisory channel(s) addresses by the *aid*

If included in the *spec\_block* at all, *SDTHR* may have one of the following values: "-9", "-8", "-7", "-6", or "-5".

- 9 This sets the signal degrade threshold at a BER of  $10^{-9}$ .
- 8 This sets the signal degrade threshold at a BER of  $10^{-8}$ .
- 7 This sets the signal degrade threshold at a BER of  $10^{-7}$ .
- 6 This sets the signal degrade threshold at a BER of  $10^{-6}$ .
- 5 This sets the signal degrade threshold at a BER of  $10^{-5}$ .

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command may affect service and/or corrupt performance monitoring data.

## OUTPUT FORMAT

If the network element fully complies with the provisioning request, the following output message is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

The following example provisions the OLS supervisory signal "supr-1a" provisioning as follows:

- Signal Degrade Threshold of  $10^{-6}$
- Supv. Failure Alarm Level of MN

```
ent-supr:LT-OLS:supr-1a:123456:::SDTHR=-6,NFCNCDE=MN;
```

```
IP 123456
```

```
<
```

```
LT-OLS 93-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

In addition to the non-message-specific error responses listed in the **RTRV-HDR** error responses description, the following error responses are listed in the order and priority that OLS checks for each condition.

If the network element receives this command with any extra (beyond the input format specification above) command parameter blocks (:), parameters (not supported by OLS, delimited by ","), or termination characters (;), the following error response is returned:

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

If the network element receives this command with the same parameter specified more than once, the following error response is returned:

```
sid date time
M ctag DENY
  IISP
  /* Input, Invalid Syntax or Punctuation, parameter(s) multiply
  defined */
;
```

If OLS receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or inconsistent
  with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
  INUP
  /* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

If the network element receives this command with a *NTFCNCDE* value that is not supported by network element, the following error response is returned:

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

If the network element receives an **ENT-SUPR** command with otherwise valid

*spec\_block* parameter(s), but for which, **SUPR** and the parameter(s) are not in agreement, the following error response is returned:

```
sid date time
M ctag DENY
IDNV
/* Input, Data Not Valid, parameter settings inconsistent with
modifier value */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-SUPR**

## ENT-SYS

**ENT-SYS:** Enter System

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**ENT-SYS**:*tid*[:*aid*]:*ctag*[:::*spec\_block*];

## DESCRIPTION

The **ENT-SYS** command can be initiated by users to modify system attributes associated with the network element at the system level or X.25 attributes, but is not associated with any particular facility or equipment unit. Only the attributes specified in the command will be changed; those attributes not in the command will remain as before.

When a network element receives an **ENT-SYS** command from a user, the network element will modify its system level or X.25 attributes with the received attributes if the received attributes are different from the currently effective attributes at the system. If the command requests a change in the **dsne** designation, all overhead controller circuits in the network element will restart their program.

### ⇒ NOTE:

System level attributes remain in effect until modified (for example, by another execution of the TL1 command **ENT-SYS**) until overridden by system initialization.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. The <i>aid</i> value, if supplied, must have the following value:  <b>system</b> This specifies that system parameters are to be modified.  Entity: System The allowable value is: (SYSTEM)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter.

A "." is allowed only if all other characters are digits.

*spec\_block* Specific Parameter Block. The system level attributes to be modified are specified inside the *spec\_block*. Parameters within *spec\_block* are specified using a *name=value, name=value, . . .* type construct with no constraints on the order of parameters. Constructs such as *name1=value1, name2=, name3=, name4=, name5=value5, . . .* are acceptable and in this example only the parameters *name1* and *name5* will be changed at the network element. If the current value of the parameter *name1* is already *value1* in the above example, *name1* will not be changed.

For the **ENT-SYS** command, the *spec\_block* may contain one or more of the following parameters:

**NEW\_TID** New Target Identifier. The *new\_tid* is the new name of the network element to which the command is addressed.

**STD** Standard. This parameter has one of two values: "SONET" or "SDH". SONET indicates that the network element is provisioned to operate in a SONET environment

SDH indicates that the network element is provisioned to operate in a SDH environment. In SDH mode, the network element indicators map to SONET network element indicators as follows:

- Alarm Indicators:

SONET	SDH
<b>Critical(CR)</b>	<b>Critical</b>
<b>Major(MJ)</b>	<b>Prompt</b>
<b>Minor(MN)</b>	<b>Deferred</b>
<b>Not Alarmed(NA)</b>	<b>No Alarm</b>
<b>Not Reported (NR)</b>	<b>No Report</b>
<b>Not Indicated (NO)</b>	<b>Not Indicated</b>

- Status indicators/ACO[Suppress] button:

SONET	SDH
<b>ABN</b>	<b>Abnormal</b>
<b>ACO</b>	<b>Suppress</b>
<b>NE Acty</b>	<b>Info-N</b>
<b>FE Acty</b>	<b>Info-F</b>

The alarm level philosophy of SDH terminals and SONET terminals is different for reporting service affecting conditions. Service affecting conditions in a SONET terminal are deemed as "Critical" while most service affecting alarms in a SDH terminal are

"Prompt". All controller failures in SONET terminals lead to "Major" alarms while SDH terminals deem them as "Prompt" as well.

For OLS a straightforward mapping between "Major" alarms and "Prompt" alarms works as all conflicting conditions that are reported as "Critical" in SONET world and "Prompt" in SDH world are deemed as "Minor" in OLS.

Apparently, all SONET "Minor" alarms map to SDH "Deferred" alarm. All status conditions reported as "NE Acty" or "FE Acty" in SONET are reported as "Info" in SDH terminal. The telemetry packs shall be capable of interfacing with AU4 mapped STM-1 signals at the CMS ports.

This requires the ability to handle "S" bit in the pointer word in the output CMS signal. The SONET and SDH specification for this bit is opposite. SONET equipment ignores the "S" bit setting. However, SDH equipment raises a LOP (loss of pointer) defect if the unexpected value is received.

The Telemetry pack will not use the "S" bit to generate LOP defects.

**DSNE** Directory Service-Network Element. This parameter has one of the two values: "YES" or "NO". *YES* indicates that the system specified by the *tid* is a Directory Service-Network Element (DS-NE).

**AGNE** Alarm Gateway Network Element. This parameter has one of two values: "YES" or "NO". *YES* indicates that the system specified by the *tid* is an Alarm Gateway Network Element (AGNE). One AGNE is needed for each Alarm Group to support message communications for network element status features (FE activity, Office Alarms, Parallel Telemetry, Miscellaneous discrettes, remote ACO and FE user panel status). Any member of the Alarm Group can be an AGNE but some may be preferred because of their position in the subnetwork or location near a maintenance center. Another network element of the same Alarm Group may be provisioned as a backup (dual) AGNE if required.

**ALMGRP** The alarm group (also known as SONET Maintenance Sub-Branch or SMSB) has an integer value between 0 and 255 (inclusive). Zero 0 indicates that the local network element does not exchange remote alarm information with any other network elements. Any other value for this parameter means that the local network element will exchange remote alarm information with all other network elements in the maintenance subnetwork

which share the same alarm group value. All network elements in the given DCC domain (subnetwork), whether nearby or not, that have the same alarm group number are members of the same group.

All members of the alarm group will share network element Status information with each other but not with network elements of different alarm groups though they may also be in the same DCC domain. Sharing the network element status information between network elements in different alarm groups is made possible through the use of alarm servers.

**X25PS**

X.25 Packet Size. This parameter may be set to one of two values: "256" or "128". This parameter determines the TL1 packet size for the X.25 interface.

**⇒ NOTE:**

Changing the X.25 packet size parameter at a network element with active X.25 link will cause that X.25 link to be reset and all active TL1 logins will be automatically dropped. All established services on the affected X.25 link will have to be reestablished.

**DIRN**

Direction. For single facing end terminals, this parameter has one of two values: "1A-TX" or "1A-RCV". For dual facing end terminals, this parameter must have the value "DUAL".

The **DIRN** values are NOT case-sensitive.

**1A-TX** indicates that the optical lines 1A, 2A, 3A and 4A are carrying traffic in the transmit direction (out of OLS) and optical lines 1B, 2B, 3B and 4B are carrying traffic in receive direction (that is, into OLS). This parameter is significant in OLS end terminals (but not in OLS repeaters). An OLS end terminal provisioned as **1A-TX** indicates that the output from the telemetry pack is connected to the 1A OA circuit pack and the input is connected to 1B OA circuit pack (that is, optical line 1A is carrying traffic in transmit direction. At the other end terminal the telemetry pack should have reverse orientation in the sense, that as it is receiving traffic on line 1A its input should be connected to 1A OA circuit pack and its output should be connected to 1B OA circuit pack. Hence, this particular end terminal should be provisioned as **1A-RCV**.

**DUAL** indicates an end terminal that faces in both the east and west directions. In this configuration, optical

line 1B/3B is carrying traffic in the transmit direction (out of OLS) on side 1 (east). and that the optical line 2A/4A is carrying traffic in transmit direction (out of OLS) on side 2 (west). Also, optical line 1A/3A is carrying traffic in receive direction (that is, into OLS) on side 1(east) and that the optical line 2B/4B is carrying traffic in receive direction (in OLS) on side 2. An OLS end terminal provisioned as `DUAL` indicates that the optical lines 1 and 3 and TLM 1A/3A are connected as in "1A-RCV" mode while optical lines 2 and 4 and TLM 2A/4A are connected as in "1A-TX" mode.

The single OA configuration is an exception to above definitions. For single OA configuration, a terminal in "1A-TX" mode has the telemetry output from TLM xA going to OA circuit pack in slot OA-xB. For non dual end terminal x=1-4, for dual end terminal x=2,4. Similarly, a terminal in "1A-RCV" mode has the telemetry output from TLM yA going to OA circuit pack in slot OA-yA. For non dual end terminal x=1-4, for dual end terminal x=1,3.

However, in a single OA the relative placement of OMU/ODU and OAs remains same as in a two OA configuration.

The `DIRN` values are NOT case-sensitive.

#### PROTOCOL

#### ⇒ NOTE:

Protocol is not a valid parameter starting in Release 2.0. The equivalent functionality is covered by the `ENT-CID-SECU` command.

**SIDE1\_SYS** Side 1 System Type. This parameter provisions side 1 of network element for a specific configuration. Side 1 of a network element refers to optical line pairs 1-4 on a regular end terminal or repeater. It refers to optical line pairs 1 and 3 if the terminal is provisioned as "DUAL". This parameter can have the following values: "A","B","C","1\_OA". The value `A` sets all optical amplifiers in side 1 in their default mode.

The applications supported by all values is determined by the equipped optical amplifier pack type. Changing system type from "1\_OA" to any other setting may cause all packs in the affected optical line to reset.

The optical line reset condition occurs if and only if an OA pack is missing during the above configuration change or when an optical line transitions from AUTO

to IS.

OLS shall support following outside plant loss configurations. To support any configuration, a specific OA and provisioning value for the "side" shall be required:

OA	Side Config	# of spans	Span loss(dB)		Max No. of Wavelengths	Bit rates	
			min	max			
LEA6	A	1	22	35	8	OC48/12/3	
		2	22	34			
		3	22	33			
	B	4	26	31			
		5	26	30			
	A	1	22	33			16
LEA7	A	1	22	33	16	OC48/12/3	
		2	22	30			
		3	22	28			
	B	4	22	27			
		5	21	26			
	C	6	21	26			
		7	17	22			
		8	17	22			
	LEA105	A	1	14			18
1_OA		1	0	12	OC48/12 OC48/3 OC12/3 OC48 OC12 OC3		
		1	0	12			
		1	0	13			
		1	0	16			
		1	0	13			
		1	0	16			
		1	0	20			

Dual facing terminal shall be capable of supporting different OAs on each side of the terminal. This implies the OAs in optical line pairs 1 and 3 (side 1) could be different than the OAs in the optical line pairs 2 and 4 (side 2).

All OA in a side shall be of the same code. Otherwise, an alarm is raised.

Since (non-dual) end terminals and repeaters have only side 1, all OAs in the terminal should have the same code.

For future upgrade to optical WAD, it is recommended that both sides of a dual facing terminal are provisioned/equipped the same. It is possible for side 1 and side 2 to have different system configurations. However, all equipage shall be consistent with in a side.

For future upgrade to optical WAD, it is recommended that both sides are provisioned/equipped the same for Dual Facing terminal. If the equipage is not consistent with the provisioned system configuration, an alarm shall be raised.

The inconsistent OA pack shall continue to operate with unchanged setting. If rebooted or booting for the first time, the OA pack shall operate with original value setting. For side 1 (of dual and non dual terminals) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 1 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

For side 2 (of dual facing terminal) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 2 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

If a side is operating in single OA mode, the operating mode is reported as "1\_OA".

An LEA105 in a side operating in single OA mode, assumes pump power setting consistent with single OA mode. If a side provisioned as single OA is not operating in single OA mode, an alarm is raised.

The alarm suppresses the equipage inconsistent with provisioned mode alarm for OA pack associated with ODU thru back plane.

The operating mode is reported as "2\_OA". If operating mode is inconsistent with provisioned mode, all OAs in the side operate with unchanged settings. On booting for the first time, the packs will assume original value settings. A side provisioned to operate in any configuration except single OA shall always report operating mode as "2\_OA".

For these configurations, operating mode is always consistent with provisioned mode.

**SIDE2\_SYS** Side 2 System Type. This parameter provisions the side 2 of network element for a specific configuration. Side 2 implies optical line pairs 2 and 4 on a terminal provisioned as a dual facing terminal. The parameter is ignored if the terminal is not provisioned as dual facing terminal. This parameter can have the following values: "A","B","C","1\_OA". The value **A** sets all optical amplifiers in side 2 in their default mode.

The applications addressed by each value is defined by the equipped optical amplifier type. Changing system type from "1\_OA" to any other setting may cause all packs in the affected optical line to reset.

The optical line reset condition occurs if and only if an OA pack is missing during the above configuration change or when an optical line transitions from AUTO to IS.

OLS shall support following outside plant loss configurations. To support any configuration, a specific OA and provisioning value for the "side" shall be required:

OA	Side Config	# of spans	Span loss(dB)		Max No. of Wavelengths	Bit rates	
			min	max			
LEA6	A	1	22	35	8	OC48/12/3	
		2	22	34			
		3	22	33			
	B	4	26	31			
		5	26	30			
	A	1	22	33			16
LEA7	A	1	22	33	16	OC48/12/3	
		2	22	30			
		3	22	28			
	B	4	22	27			
		5	21	26			
	C	6	21	26			
		7	17	22			
		8	17	22			
	LEA105	A	1	14			18
1_OA		1	0	12	OC48/12 OC48/3 OC12/3 OC48 OC12 OC3		
		1	0	12			
		1	0	13			
		1	0	16			
		1	0	13			
		1	0	16			
		1	0	20			

Dual facing terminal shall be capable of supporting different OAs on each side of the terminal. This implies the OAs in optical line pairs 1 and 3 (side 1) could be different than the OAs in the optical line pairs 2 and 4 (side 2).

All OA in a side shall be of the same code. Otherwise, an alarm is raised.

Since (non-dual) end terminals and repeaters have only side 1, all OAs in the terminal should have the same code.

For future upgrade to optical WAD, it is recommended that both sides of a dual facing terminal are provisioned/equipped the same. It is possible for side 1 and side 2 to have different system configurations. However, all equipage shall be consistent with in a side.

For future upgrade to optical WAD, it is recommended that both sides are provisioned/equipped the same for Dual Facing terminal. If the equipage is not consistent with the provisioned system configuration, an alarm shall be raised.

The inconsistent OA pack shall continue to operate with unchanged setting. If rebooted or booting for the first time, the OA pack shall operate with original value setting. For side 1 (of dual and non dual terminals) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 1 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

For side 2 (of dual facing terminal) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 2 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

If a side is operating in single OA mode, the operating mode is reported as "1\_OA".

An LEA105 in a side operating in single OA mode, assumes pump power setting consistent with single OA mode. If a side provisioned as single OA is not operating in single OA mode, an alarm is raised.

The alarm suppresses the equipage inconsistent with provisioned mode alarm for OA pack associated with ODU thru back plane.

The operating mode is reported as "2\_OA". If operating mode is inconsistent with provisioned mode, all OAs in the side operate with unchanged settings. On booting for the first time, the packs will assume original value settings. A side provisioned to operate in any configuration except single OA shall always report operating mode as "2\_OA".

For these configurations, operating mode is always consistent with provisioned mode.

If the *spec\_block* is null, the currently effective attributes at the network element system prevails.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command may affect service. Network element access may be affected. The operation of other nodes in the ring may be affected. Active X.25 links will be reset and will have to be reestablished.

## OUTPUT FORMAT

If the network element fully complies with the **ENT-SYS** request, the following completion response is returned.

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

If the **ENT-SYS** command does not alter the existing system level attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown above). An example of this is when the system addressed by the *tid* is already a designated **dsne** and **ENT-SYS** command is received to set that system as a **dsne**.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

The following example shows a command to modify the **system** name to 1-BROAD-STREET-CO and make the network element the DS-NE:

```
ent-sys:LT-PF-2000:system:123456:::new_tid=1-BROAD-STREET-CO,dsne=yes;

IP 123456
<

      1-BROAD-STREET-CO 93-10-26 16:42:11
M 123456 COMPLD
;
```

Note here that changing the **dsne** designation has caused the system to restart the program causing the response to the command to be incomplete.

The following example shows a command to modify the X.25 Packet Size:

```
ent-sys:LT-PF-2000:::123456:::x25ps=128;

IP 123456
<

      LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

The following example shows a command to alter the SMSB from its original value of 255 and to make the local NE an AGNE.

```
ent-sys:LT-PF-2000:::123456:::almgrp=248,agne=yes;

IP 123456
<

      LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

The following example shows a command to modify the `system` name to 1-BROAD-STREET-CO and provision the `dirn` parameter as 1A-RCV:

```
ent-sys:LT-OLS:system:123456:::new_tid=1-BROAD-STREET-CO,dirn=1A-RCV;

IP 123456
<

    1-BROAD-STREET-CO 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR ERROR RESPONSE** section. The error responses listed there apply to the `ENT-SYS` command, also.

If a network element receives an `ENT-SYS` command with a `new_tid` value that is not valid, the following error response is returned:

```
sid date time
M ctag DENY
IITA
/* Input, Invalid Target Identifier, invalid NEW_TID */
;
```

If a network element receives an `ENT-SYS` command with a `dsne` value other than `yes` or `no`, the following error response is returned:

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

If a network element receives an `ENT-SYS` command with an `almgrp` value that is not an integer between 0 and 255, the following error response is returned:

```

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

```

If a network element receives an **ENT-SYS** command with an **agne** value other than **yes** or **no**, the following error response is returned:

```

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

```

If a network element receives an **ENT-SYS** command with an **x25ps** value other than 256 or 128, the following error response is returned:

```

sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid X25PS */
;

```

If an OLS End Terminal receives an **ENT-SYS** command with a **dirn** value other than 1A-TX, 1A-RCV, or DUAL, the following error response is returned:

```

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

```

If a network element receives an **ENT-SYS** command with a **SIDE1\_SYS** value other than A,B or 1\_OA, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SIDE1_SYS */
;
```

If a network element receives an **ENT-SYS** command with a **SIDE2\_SYS** value other than same,A,B or 1\_OA, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, invalid SIDE2_SYS */
;
```

If a network element receives an **ENT-SYS** command with a **STD** value other than SONET or SDH, the following error response is returned:

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

If a network element that does not support **dirn** (OLS repeater) receives an **ENT-SYS** command with a **dirn** parameter, the following error response is returned:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, invalid spec_block parameter */
;
```

If an **ENT-SYS** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

If a network element receives an **ENT-SYS** command with a `spec_block` parameter attribute that does not match the `aid`, or that parameter is not supported by the particular software release in the receiving system, the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, invalid spec_block parameter */
;
```

If the network directory in the local subnet, that is, the DIB, is locked, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed, the local subnet's
Network Directory is locked */
;
```

The DIB may be locked due to either the presence of multiple DSNEs in the local subnet or the DSNE being in the initial registration state.

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-SYS**

**SET-SID**

## ENT-USER-SECU

**ENT-USER-SECU:** Enter User Security

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0. If password aging is enabled, a non-Privileged user may not change a password unless at least seven (7) calendar days have passed since the last password change of that login.

After the successful completion of an **ENT-NE-SECU** command, a privileged user may change the password only during that session. Any attempt to change a password after ending the session when less than seven days have expired shall also be denied. The NE will keep track of the date of the last time each user password changed. When a user logs in, this date will be compared with the current date. If the current date is more than the provisioned number of days after the last changed date<sup>1</sup>, then the NE considers the password expired. A user's password will also be considered expired the first time<sup>2</sup> a user logs in successfully after the login was created. This is to force users to select a password different from the one entered by the privileged user when the login was created.

## INPUT FORMAT

```
ENT-USER-SECU:tid:uid:ctag::pid,,uap[:keyword_block];
```

## DESCRIPTION

**ENT-USER-SECU** command is used by an appropriate administrator to enter the security parameters associated with a user.

This command is available only to the users for all CIT, DCC or TL1 ports on the NE.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>uid</i>	This is the User Identifier of a user. Valid values are a case-sensitive alphanumeric string of 1 to 10 characters.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both

1. Note: it is entirely possible that a privileged user changed the NE date and time via **ED-DATE** command so that this is the case even though the number calendar days since the last password change is less. The NE shall always behave as if the corresponding number of calendar days have passed.

2. Note that this does **not** apply to the two Expert logins, **LT01** and **LT02**, after initial software installation.

numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

*pid*

Passwords consists of a string of alphabetic, numeric and symbolic characters that contains a minimum of six characters and a maximum of ten characters, where at least two are non-alphabetic and one is symbolic. Passwords are case sensitive.

Password strings will be encrypted when stored in the network element. They will not be encrypted when transmitted between the network element and the CIT, OS or dumb terminal.

Passwords are never transmitted from the network element to the PC or a TL1 channel.

Symbolic characters:

!"% '()\*+-. /<>[] '{|}~

Numeric characters:

0 1 2 3 4 5 6 7 8 9

Alphabetic characters:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m n o p q r s t u v w x y z

*uap*

User Access Privilege. It specifies the user's authorization levels (AL) for each command function category (FC) in the form of **FCAL&FCAL&FCAL&FCAL**.

Multiple FCALs are specified by using single ampersands (&).

Commands are grouped into 4 FCs, which are Configuration Management (C), Fault Management (F), Performance Monitoring (PM), and Security Management (S). The user access privilege shall be specified in the order of FCs as Cw&Fx&PMY&Sz .

For each FC, user can be assigned with one of the four ALs value. In the descending privilege order, they are : Privileged (level 4), General (level 3), Basic (level 2), and Reports (level 1). Expert is not allowed for this parameter since Expert users cannot be created in the NE. This is a divergence from TR-833, Issue 5.

Following are possible FCAL values:

C[1-4] For configuration Management Authorization Level 1 through 4.

F[1-4] For Fault Management Authorization Level 1 through 4.

PM[1-4] For Performance Monitoring Authorization Level 1 through 4.

S[1-4] For security Management Authorization Level 1 through 4.

*keyword\_block*

Keyword Parameter Block. Temporary login attributes to be modified are specified inside the *keyword\_block*. Parameters within *keyword\_block* are specified using a

*name=value,name=value,...* type construct with no constraints on the order of the arrangement of parameters. Constructs such as *name1=value1, name2=,...* are acceptable and in this example only the parameter *name1* will be attempted to be changed at the network element. If the current value of the parameter *name1* is already *value1* in the above example, *name1* will not be changed.

For the **ENT-USER-SECU** command, the *keyword\_block* may contain neither or both of the following parameters:

- TYPE** If a temporary login is desired, this parameter must be "VISITOR".
- visitor** Visitor Login. This indicates that this login is assigned for temporary access to the network element.
- EXPDAT** Expiration Date. This is the requested **EXPDAT** in the following format: YY-MM-DD, where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31.
- The expiration date must be set if **TYPE=visitor**.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command.

NOTE: User access privilege (UAP) must be entered in the format of Cw&Fx&PMy&Sz. Where: "&" is the delimiter; C (configuration), F (fault), PM (performance monitoring), S (security) are keywords used for the command function categories; w, x, y, z are values 1 to 4 for user authorization level in ascending user privilege, with 1 for the lowest user privilege. For example, C3&F2&PM4&S1 is a valid UAP.

## OUTPUT FORMAT

If the network element fully complies with the enter user security request, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
ENT-USER-SECU:LT-PF-2000:kjlee:123456::pass12+,,C4&F3&PM1&S2;
```

```
IP 123456
```

```
<
```

```
LT-PF-2000 97-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

### ⇒ NOTE:

The below single-line command (**bold type**) is presented in more than one line for ease of reading.

```
ENT-USER-SECU:LT-PF-2000:kjlee:123456::pass12+,,general:TYPE=visitor,  
EXPDAT=93-12-31;
```

```
IP 123456
```

```
<
```

```
LT-PF-2000 93-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
;
```

### ⇒ NOTE:

The below single-line command (**bold type**) is presented in more than one line for ease of reading.

```
ENT-USER-SECU:LT-PF-2000:kjlee:123456::pass12+,,C4&F3&PM1&S2:
  TYPE=visitor,EXPDAT=97-12-31;

IP 123456
<

LT-PF-2000 97-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives an **ENT-USER-SECU** command from a user trying to enter his or her own *uid* (user identifier) and/or *uap* (privilege) value, the following error response is returned:

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

If the network element receives an **ENT-USER-SECU** command with an existing *uid* (user identifier) that is not that user's own *uid*, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity */
;
```

If the network element receives an **ENT-USER-SECU** command when it already has reached its maximum user logins the following error response is returned:

```
sid date time
M ctag DENY
SLEM
/* Status, List Exceeds Maximum */
;
```

If the network element receives an **ENT-USER-SECU** command with an invalid *pid* (password) value, the following error response is returned:

```
sid date time
M ctag DENY
PIUI
/* Privilege, Illegal User Identity, invalid PID */
;
```

If the network element receives an **ENT-USER-SECU** command with an invalid *uap* (user access privilege) value, the following error response is returned:

```
sid date time
M ctag DENY
PIUC
/* Privilege, Illegal User Code, invalid UAP */
;
```

If the network element receives an **ENT-USER-SECU** command with a **TYPE** other than **VISITOR**, the following error response is returned:

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

If the network element receives an **ENT-USER-SECU** command with an invalid **EXPDAT**, the following error response is returned:

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

If the network element receives an **ENT-USER-SECU** command without an **EXPDAT** when **TYPE** specified in the *keyword\_block*, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**DLT-USER-SECU**

**ED-USER-SECU**

**RTRV-USER-SECU**

## INH-MSG-EQPT

**INH-MSG-EQPT**: Inhibit Message Equipment

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
INH-MSG-EQPT :tid:aid:ctag[::, ,];
```

## DESCRIPTION



### CAUTION:

*This command will suppress autonomous indications of failures at office alarms, parallel telemetry, and/or X.25 based OS interfaces.*

**INH-MSG-EQPT** commands are initiated by users to inhibit transmission of all autonomous TL1 messages, office alarms, and/or parallel telemetry from a network element.

When a network element receives an **INH-MSG-EQPT** command, the network element inhibits transmission of all of its autonomous messages, except office alarms, and/or parallel telemetry, if autonomous message and alarm reporting has not already been inhibited.

When autonomous message reporting is inhibited, the network element reports an abnormal status condition in an autonomous **REPT EVT** message.

This **REPT EVT** message, containing the abnormal status condition report, would be the last autonomous message sent before the **INH-MSG-EQPT** command takes effect.

While autonomous message reporting is inhibited, the network element continues to respond fully to all command messages, specifically **RTRV-ALM** and **RTRV-COND**.

All new autonomous messages are inhibited. All autonomous messages that are in queue prior to the normal completion of the **INH-MSG-EQPT** command are reported.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. The <i>aid</i> value can be one of the following values: "ALL", "OFFICE ALMS", "PAR TLM", or "TL1".
<b>all</b>	This specifies that reporting for all of the parameters below is to be inhibited on the network element.

<code>office alms</code>	This specifies that reporting of office alarms is to be inhibited on the network element.
<code>par tlm</code>	This specifies reporting of alarms over the parallel telemetry is to be inhibited on the network element.
<code>t11</code>	This specifies that autonomous message reporting is to be inhibited on all TL1 ports on the network element.

If no value is provided for *aid*, **all** is assumed.

*ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command will suppress autonomous indications of failures at office alarms, parallel telemetry, and/or X.25 based Operations System (OS) interfaces.

## OUTPUT FORMAT

If the network element fully complies with the **INH-MSG-EQPT** request, the following normal completion response is returned:

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

If the network element receives an **INH-MSG-EQPT** command message from a user when transmission of all autonomous messages, office alarms, and/or parallel telemetry had already been inhibited, the network element provides a normal completion response.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
inh-msg-eqpt:LT-OLS:all:123xyz;
```

```
IP 123xyz
```

```
<
```

```
LT-OLS 96-01-06,09:30:49
```

```
M 123xyz COMPLD
```

```
;
```

```
inh-msg-eqpt:LT-PF-2000:all:123xyz;
```

```
IP 123xyz
```

```
<
```

```
LT-PF-2000 96-06-06,09:30:49
```

```
M 123xyz COMPLD
```

```
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error response section. The error responses listed there apply to the **INH-MSG-EQPT** command, also.

If an **INH-MSG-EQPT** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**ALW-MSG-EQPT**

REPT EVT EQPT

## INIT-REG-ALL

**INIT-REG-ALL:** Initialize Register All

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
INIT-REG-ALL:tid:[aid]:ctag:,,,,,tmper[,,];
```

## DESCRIPTION



### CAUTION:

*Current day and/or current 15-minute performance monitoring data storage registers for the optical parameters of the addressed line will be corrupted as a result of this command.*

**INIT-REG-ALL** commands can be initiated to request the network element to initialize all *current* day and/or all *current* 15-minute performance-monitoring (PM) storage registers.

PM registers for previous day and previous 15-minute time periods are not affected.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. Because <i>all</i> current daily and/or 15-minute PM registers are initialized, the <i>aid</i> value must be "ALL" or null (default = ALL).
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>tmper</i>	Time period. This requests that performance monitoring registers for a specified time interval be initialized. This parameter must have one of the values: "15-MIN", "1-DAY", or "ALL".
<b>15-MIN</b>	This requests that 15-minute PM registers be initialized.
<b>1-DAY</b>	This requests that daily PM registers be initialized.
<b>ALL</b>	This requests that 15-minute <i>and</i> daily PM registers be initialized.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

**CAUTION:** Executing this command will cause all performance monitoring data collected in all current registers of the selected bin(s) to be deleted.

## OUTPUT FORMAT

If the network element fully complies with the initialize register request, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
INIT-REG-ALL:LT-PF-2000:a11:123456:,,,,,15-MIN;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives an **INIT-REG** command with a command modifier other than **ALL** or **OLINE**, the following error response is returned:

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

If the network element receives an **INIT-REG** command with an invalid *aid* value the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If the network element receives an **INIT-REG-ALL** command with an invalid *tmper* value (that is, anything other than **15-MIN**, **1-DAY** or **ALL**), the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-PM**

**SET-TH**

**RTRV-TH**

**RTRV-BASELINE**

## INIT-REG-OLINE

**INIT-REG-OLINE:** Initialize Register Optical\_Line

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
INIT-REG-OLINE:tid:aid:ctag::[reason,[ochan_aid]],,,[,,];
```

## DESCRIPTION



### CAUTION:

*Current day and/or current 15-minute performance monitoring data storage registers for the optical parameters of the addressed line will be corrupted as a result of this command.*

**INIT-REG-OLINE** commands can be initiated to request the network element to baseline certain optical parameters for each optical line in a network element. Currently, it is used to baseline SPR-C of all optical channels and the TOPR-OL in the addressed optical line.

**INIT-REG-OLINE** commands will require the user to provide a "reason" for baseline. If the reason for initiating **INIT-REG-OLINE** command is a dropped optical channel, the optical channel aid is needed as well.

**INIT-REG-OLINE** commands will corrupt *current* day and/or *current* 15-minute performance-monitoring (PM) storage registers for **TOPR-OL** of the addressed optical line, and **SPR-C** of all optical channels in that optical line.

PM registers for previous day and previous 15-minute time periods are not affected.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the optical line for which optical parameters need to be baselined.  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter.

A "." is allowed only if all other characters are digits.

*reason* The reason states the reason for executing **INIT-REG-OLINE** command on the addressed optical line. This field can take one of the following values: "OA\_REPLACED", "OSP\_REPLACED", "OCHAN\_DROPPED", "0", "1", "2", "3", "4", "5", "6", "7", "8", or "9".

*ochan\_aid* Optical Channel Access Identifier. If the *reason* for baseline is **OCHAN\_DROPPED**, this parameter gives the optical channel access identifier of the channel dropped. This parameter has no default value when *reason* is **OCHAN\_DROPPED**.

The *ochan\_aid* should be NULL if the *reason* parameter has any other valid string.

Entity: Single Optical Channel

Legal Values: (OCHAN)-(1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(1-16)

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command will corrupt current day and/or current 15-minute performance monitoring data storage registers for the optical parameters of the addressed optical line.

## OUTPUT FORMAT

If the network element fully complies with the initialize register request, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
INIT-REG-OLINE:LT-OLS:oline-1a:123456::OCHAN_dropped,ochan-1a-1;  
  
IP 123456  
<  
  
LT-OLS 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives an **INIT-REG** command with a command modifier other than **ALL** or **OLINE**, the following error response is returned:

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

If the network element receives an **INIT-REG** command with an invalid *aid* value the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

If the network element receives an **INIT-REG-OLINE** command with an invalid *reason* or a NULL entry then the following error response is returned:

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

If the network element receives an **INIT-REG-OLINE** command with an invalid *ochan\_aid* or a NULL entry when reason="OCHAN\_dropped" then the following error response is returned:

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

If the network element receives an **INIT-REG-OLINE** command with any non-null *ochan\_aid* entry when "reason" is other than "OCHAN\_dropped" then the following error response is returned:

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

If the network element receives an **INIT-REG-OLINE** command with an invalid *timper* value (that is, anything other than NULL, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM

SET-TH

RTRV-TH

RTRV-BASELINE

## INIT-SYS

**INIT-SYS:** Initialize System

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**INIT-SYS** :*tid:aid:ctag:ph;*

## DESCRIPTION



### WARNING:

*Execution of this command may affect service.*

The **INIT-SYS** command with the *ph* parameter set to 9 initializes the system. The **INIT-SYS** command with the *ph* parameter set to 3 resets the system. Initializing the system initializes the provisionable parameters to their original values whereas resetting the system resets the software without changing the provisioned parameters values.

The command **INIT-SYS** with the **all** *aid* should NOT be used on an in-service system when the **ph** is set to 9. With the *ph* set to the highest level, the highest phase of initialization takes place; with this setting, this command should only be used at the end of system installation before system turnup.



### CAUTION:

*Execution of this command at any network element will also affect the OS communication with that network element and all OS users logged into that network element will be logged out.*

With the phase set to the highest level (9), this command initializes provisionable parameters to their original values. The time and date parameters are not affected by this command.

To reset the system, the **INIT-SYS** command can be used with the phase parameter set to 3. This command with the phase set to 3 resets the system software without changing parameters.



### CAUTION:

**INIT-SYS** with *ph=3* will wipe out the history log.

Protection switches will be frozen until the reset is completed.

After entering the **INIT-SYS** command, with the phase set to the highest level (9), the system will show transient DCC failures that are recorded in the Alarm and History reports. This is a normal, expected system behavior.

This command is available to privileged users for both initializing the system when the phase value is set to 9 and for resetting the system when the phase value is set to 3.

This command is available to general users only for resetting the system when the phase value is set to 3 and NOT for initializing the system. If a general user attempts to initialize the system by setting the phase value to 9, the command is denied.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. <i>aid</i> is a required parameter and can have only one value, "ALL" for both system initialization ( <i>ph</i> =9) and system reset ( <i>ph</i> =3).
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>ph</i>	Phase. This field specifies the level of the system initialization. This parameter must be one of the following values: "3" or "9".  9            This is the highest phase of initialization and specifies an initialization of system parameters and a start of systems software. This command with <i>ph</i> =9 is used only at the end of installation of a new system and is never used on an in-service system.  3            This is an interim level of initialization that resets the system software without affecting the setting of parameters. It does cause the history and performance monitoring data to be lost.  A user with authorization level "general" for this command function category is allowed to select a phase value of 3 only. A user with authorization level "privileged" or above for this command function category is allowed to select a phase value of 3 or 9.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Network element access may be affected by this command. For PH=3, this command saves the current value of all provisioned parameters, deletes the history log, freezes the switch states, and restarts the controllers. For PH=9, this command returns all provisioned parameters to their original values. This may disrupt service. Proceed with extreme caution.

IMPORTANT: Verify that no software copy to or from this network element is in progress.

## OUTPUT FORMAT

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

Since a full system initialization (phase parameter set to 9) initializes the SYSCTL or the entire system, it will drop all user sessions including the one on the X.25 interface, and COMPLD message may or may not be conveyed back to the TL1 user.

Since a full system initialization occurs in the entire system, it will drop all user sessions including the one on the X.25 interface. The following example initializes the system:

```
init-sys:LT-PF-2000:all:123456::9;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

Since a full system initialization occurs in the entire system, it will drop all user sessions including the one on the X.25 interface. The following example resets the system:

```
init-sys:LT-PF2000:a11:123456::3;  
  
IP 123456  
<  
  
LT-PF2000 96-10-26 16:42:11  
M 123456 COMPLD  
;
```

Since a full system reset occurs in the entire system, it will drop all user sessions including the one on the X.25 interface.

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives an **INIT-SYS** command without an *aid* or with an *aid* field other than **a11**, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier, AID is missing, wrong or  
inconsistent with modifier */  
;
```

If the network element receives an **INIT-SYS** command with a missing or unsupported *ph* value, the following error response is returned:

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

If the network element receives an **INIT-SYS** command with a *ph* value of 9 from a general user, the following error response is returned:

```
sid date time
M ctag DENY
  IDNV
  /* Input, Data Not Valid, unallowed PH value for a general user */
;
```

If the network element receives an **INIT-SYS** command with PH=9 or PH=3 while SW download to this NE from another network element is in progress, the following error response is returned:

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed
  The system is not able to access the original parameter values
  in SYSMEM because a software download is currently in progress.
  Please try again later.
  */
;
```

If an **INIT-SYS** command with PH=9 is received while a remote software copy from the NE to another NE is in progress, the command is denied with the following error response.

```
sid date time
M ctag DENY
  SROF
  /* Status, Requested Operation Failed
  The system is not able to access the original parameter values
  in SYSMEM because a remote software copy from the network element
  to another network element is currently in progress.
  Please try again later.
  */
;
```

**⇒ NOTE:**

If an **INIT-SYS** command with PH=3 is received while a remote software copy from the NE to another NE is in progress, the command is completed with a normal completion response. However, the remote software copy to the other

NE is disrupted and the other NE could be left in an unknown state.

If an **INIT-SYS** command with PH=9 or PH=3 is received while a remote software copy from the NE to another NE is in progress, the command is denied with the following error response.

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed
   The system is not able to access the original parameter values
   in SYSMEM because a remote software copy from the network element
   to another network element is currently in progress.
   Please try again later.
*/
;
```

If the network element receives an **INIT-SYS** command while the SYSMEM is corrupted with bad checksum, the command shall be denied and the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed
   The execution of this command stopped because of a hardware problem
   in SYSMEM.
*/
;
```

If the network element receives an **INIT-SYS** command with *ph=9* while the SYSCTL and SYSMEM have incompatible software versions, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed
   The execution of this command stopped because SYSCTL and SYSTEMEM
   have incompatible software versions.
*/
;
```

If the network element receives an **INIT-SYS** command with **ph=3** while the executable code in the **SYSCTL** and **SYSTEMEM** are for different network element types, the following error response is returned:

```
sid date time
M ctag DENY
SROF
/* Status, Requested Operation Failed
   The execution of this command stopped because the SYSTEMEM and
   SYSCTL contain software for different network element types.
*/
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## OPR-ACO-ALL

**OPR-ACO-ALL:** Operate Alarm\_Cutoff All

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**OPR-ACO-ALL:** *tid*[:*aid*]:*ctag*;

## DESCRIPTION

**OPR-ACO-ALL** commands can be initiated to request the network element to operate the alarm cutoff (ACO) to silence the audible office alarms. Alarms remain silent until a new alarm condition arises.

This command is available to maintenance and reports-only users.

If this command is executed while there is an active alarm condition in the system, it will:

- Silence active audible office alarms
- Light the ACO LED on the user panel

This command is equivalent to pushing the ACO button on the user panel or activating the TBOS ACO control point.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. Because the ACO function applies to the whole system, the <i>aid</i> value must be <b>a11</b> or null (default = <b>a11</b> ).  Entity: All Legal Values: (ALL)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the operate ACO request, the following normal completion response is returned:

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

If the network element receives a valid **OPR-ACO-ALL** command, but no alarm condition exists or existing alarms have already been ACO'ed, the network element provides a normal completion response.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
OPR-ACO-ALL:LT-PF-2000:a11:123456;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **OPR-ACO-ALL** command, also.

If the network element receives an **OPR-ACO** command with a command code modifier other than **ALL**, the following error response is returned:

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

If the network element receives an **OPR-ACO-ALL** command with an invalid *aid* value (that is, anything other than **all** or null), the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## OPR-EXT-CONT

**OPR-EXT-CONT:** Operate External Control

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**OPR-EXT-CONT** :*tid*:*aid*:*ctag*::[*dur*];

## DESCRIPTION

The **OPR-EXT-CONT** command can be initiated by users to operate an external discrete control, such as a relay activation, a fan, a light, or sprinkler.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. The <i>aid</i> identifies the external miscellaneous discrete control for which a description is being provisioned. The <i>aid</i> value cannot be null and cannot be CONT-ALL.  Entity: Single Point (Control) Legal Values: (CONT)-(1-36)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>dur</i>	These systems can operate remote controls either continuously ("CONTS") or momentarily ("MNTRY"). The default value is <b>MNTRY</b> when parameter is null. The duration for the momentary operation is 300ms.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **OPR-EXT-CONT** request, the following normal completion response is returned.

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

If the **OPR-EXT-CONT** command does not alter the existing attributes, that is, the control referenced by the aid is already being operated, the network element will not deny the command. The system will respond with the completion message shown above.

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows a command for a PF-2000 system to operate discrete control 1.

```
OPR-EXT-CONT:LT-PF-2000:CONT-1:123456::conts;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

The following example shows a command for a PF-2000 system to operate discrete control 4 using a default value (MNTY) for *dur*.

```
OPR-EXT-CONT:LT-PF-2000:CONT-4:123456::;

IP 123456
<

      LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

### ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If an **OPR-EXT-CONT** command is received with an invalid access identifier, the following error response is returned:

```
      sid date time
M ctag DENY
  IIAC
/* Input, Invalid Access Identifier */
;
```

If an **OPR-EXT-CONT** command is received with an invalid duration parameter, the following error response is returned:

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

### RELATED TL1 COMMANDS/MESSAGES

**RTRV-ATTR-CONT**

**RLS-EXT-CONT**

**RTRV-ALM**

## REPT ALM

REPT ALM: Report Alarm

This autonomous message is available starting in OLS Release 1.0.

## DESCRIPTION

REPT ALM messages are generated autonomously by the network element to report an event that requires immediate attention by the craft at the OS. Each alarm message has an alarm severity associated with it.

If a condition defaults or is provisioned to have an alarm level of critical, major, or minor, the occurrence (and clearing) of that condition will be reported in a REPT ALM message.

An alarm condition reported to the OS via the REPT ALM message has a corresponding REPT ALM clearance message that is generated when the alarm condition clears.

## OUTPUT FORMAT

```
sid date time
almcde atag REPT ALM modifier
"aid:ntfncde,condtype,srveff,ocrdat,ocrtm,,, [thlev]:
 \"conddescr\",:[,tblislt]"
;
```

## OUTPUT PARAMETERS

<i>sid</i>	Source identifier. This is the system name.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
<i>almcde</i>	Alarm code. This has one of the following values: <ul style="list-style-type: none"><li>*C Critical alarm</li><li>** Major alarm</li><li>* Minor alarm</li><li>A Automatic message (nonalarm) (This is used only to report a cleared alarm.)</li></ul>
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element. The network element uses whole numbers from 000 through 999.
<i>modifier</i>	This is a message modifier to the REPT ALM command. It has one of the following values:

COM	Common. This reports an event that is not an equipment or facility condition but applies to the whole network element system.
OCHAN	Channel. This reports a facility-related event at the channel level in OLS.
CMS	CMS is the incoming customer maintenance signal [OC3 format.] This reports a facility-related event on the CMS part of the telemetry pack [OC3 format.]
EQPT	This reports an equipment-related event for an OLS.
OLINE	This reports a facility-related event on the optical line in OLS.
SUPR	This reports a facility-related event on the supervisory channel in the optical line in OLS.
<i>aid</i>	Access identifier. This is the address of the equipment component, for which an alarm is being reported.
<i>ntfncnde</i>	Notification code. This is the alarm level and will have one of the following values:
CR	Critical alarm
MJ	Major alarm
MN	Minor alarm
CL	Cleared alarm
Prompt	Prompt
Deferred	Deferred
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions.  The values for this parameter can be found in the various <b>RTRV-COND</b> command pages associated with the <i>modifier</i> output in the message. For example, condition types associated with the <b>COM</b> <i>modifier</i> are listed in the <b>RTRV-COND-COM</b> command page.
<i>srveff</i>	Service effect. This indicates the effect of the reported alarm on service and has one of the following values:
SA	Service-affecting condition
NSA	Non-service-affecting condition.
	A message reporting the clearing of an alarm has the same <i>srveff</i> value as the one reporting the alarm.
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>thlev</i>	Threshold level. For CMS and SUPR modifier type alarms only, if an incoming facility degradation or failure (or clear) is reported, the <i>thlev</i> parameter value is the bit error ratio (BER) threshold level, in integer

form, representing the closest negative power of 10 to the BER. Otherwise, this parameter is not reported.

*conddescr* Condition description. This is the text description of the reported condition.

The following table contains the condition descriptions that can be output.



**CAUTION:**

*The following table is for information only and must not be used for trouble clearing. Refer to the 365-575-201 User/Service Manual, Operation and Maintenance (TOP) section for trouble clearing information.*

**Alarm Condition Descriptions**

<b>Description</b>	<b>Meaning</b>
BC LAN failure	The board controller (BC) LAN circuitry on a circuit pack is failed in such a way as to affect BC LAN.
CP reset in progress	A circuit pack has been installed and the necessary software is being downloaded to the circuit pack.
CP (unknown type) failure	The circuit pack in the indicated slot has failed but its type is unknown.
CP (unknown type) removed	The circuit pack in the indicated slot has been removed but its type is unknown.
CPYPGM:IP tid	Copy program in progress.
DCC APS data error	An error has been detected in the DCC APS byte.
DCC startup in progress	The DCC is starting up.
different OA types in side	All of the OA circuit packs on a side of the end terminal must be the same code. (When the system is provisioned for the dual facing end terminal, the circuit pack codes on one side need not be the same as the circuit pack codes on the other side.)
DS-NE not reachable	One of the network elements in the ring network has not been provisioned "DS-NE", far end communications has been disabled to the "DS-NE", or communication to the provisioned "DS-NE" has been interrupted.
duplicate TID defined	A recently entered target identifier (TID) value is a duplicate of the TID of another network element in the ring network.
equiPAGE/prov mode inconsistent	The OA pack equipped is not compatible with the provisioned terminal configuration mode.
fuse/power failure A	The network element has a blown fuse in feeder A, a power failure to a shelf, or a power failure within the cabinet. Likely causes: A blown 10A fuse or a defective filter

**Alarm Condition Descriptions**

<b>Description</b>	<b>Meaning</b>
	board in the filter panel.
fuse/power failure A and B	The network element has a blown fuse in feeder A and feeder B, a power failure to a shelf, or a power failure within the cabinet. Likely causes: A blown 10A fuse or a defective filter board in the filter panel.
fuse/power failure B	The network element has a blown fuse in feeder B, a power failure to a shelf, or a power failure within the cabinet. Likely causes: A blown 10A fuse or a defective filter board in the filter panel.
incoming CMS LOF	A CMS loss-of-frame (LOF) condition has been detected on an incoming CMS line. Likely cause: Failure of the far end customer equipment or the local TLM circuit pack.
incoming CMS LOS	A CMS loss-of-signal (LOS) condition has been detected on an incoming CMS line. Likely causes: Failure of the far end customer equipment, the incoming CMS line (receive fiber), or the local TLM circuit pack.
incoming CMS SD	A signal degrade (SD) condition has been detected on an incoming CMS line. The line parity error rate threshold setting has been exceeded ( $10^{-5}$ through $10^{-9}$ with an original value of $10^{-6}$ ). Likely causes: Failure of the far end customer equipment or the local TLM circuit pack.
incoming CMS SF	A signal failure (SF) condition has been detected on an incoming CMS line Likely causes: Failure of the far end customer equipment, the incoming CMS line (receive fiber, or the local TLM circuit pack.
inc. (from Supr) DCC failure	The local network element cannot communicate through the supervisory signal data communications channel (DCC).
incoming optical channel LOS	An optical channel loss-of-signal (LOS) condition has been detected on an incoming optical channel.
incoming optical line LOS	An optical line loss-of-signal (LOS) condition has been detected on an incoming optical line.
incoming supr chnl fail	An incoming supervisory channel loss-of-frame (LOF) or loss-of-signal (LOS) condition has been detected on an incoming (from the optical line) supervisory channel.
incoming supr chnl SD	A signal degrade (SD) condition has been detected on an incoming (from the optical line) supervisory channel.

**Alarm Condition Descriptions**

<b>Description</b>	<b>Meaning</b>
incoming supr chnl SF	A signal failure (SF) condition has been detected on an incoming (from the optical line) supervisory channel.
inhibit alarms-office alarms	Alarm reporting via the office alarm interface is disabled.
inhibit alarms-parallel telem	Alarm reporting via the parallel telemetry interface is disabled.
inhibit alarms-X.25	Alarm reporting via the X.25 (TL1) interface is disabled.
logins inhibited	Logins are disabled.
multiple DS-NEs defined	Two or more network elements in a ring network have their "Directory Server" (DS-NE) parameter provisioned to "Yes". There must be one and only one Directory Server Network Element (DS-NE) in the ring network.
NE status comm failure	The network element is not associated with an Alarm Group Network Element (AGNE) or the AGNE cannot establish associations with all of the network elements in the alarm group.  If the AGNE loses power, all network elements in the alarm group will report this condition; however, the condition may not be reported for several minutes.
OA failure	Failure of an OA circuit pack.
OA LAN failure	The local area network (LAN) circuitry on a circuit pack has failed in such a way as to affect the Overhead Access (OA) LAN.
OA removed	An OA circuit pack is missing from slot.
ODU warmup in progress	An ODU circuit pack has been installed and is warming up to a stable operating temperature.
OMU/ODU mismatch or missing	An OMU/ODU mismatch has been detected or an OMU/ODU is missing.
opr/prov mode inconsistent	Only certain OA circuit pack codes support single OA operation. When a side is provisioned for single OA operation, the OA circuit pack in the OA slot corresponding to the ODU must be one of those codes.
optical line ID mismatch	A fiber misconnection has been detected between Optical Line System network elements.
optical line reset in progress	An optical line has transitioned from the AUTO state to the IS state or the OA configuration has changed from single OA to Dual OA while packs are missing.
provisioned control point	The specified control point (miscellaneous discrete output) is active. Note: The actual message that appears in the condition description report for this condition can be provisioned; this is the default message. See the <b>RTRV-ATTR-CONT</b> and <b>SET-</b>

**Alarm Condition Descriptions**

<b>Description</b>	<b>Meaning</b>
	<b>ATTR-CONT</b> commands.
provisioned environment alarm point	A contact closure is present at an environmental input point of the network element. Note: The actual message that appears in the condition description report for this condition can be provisioned; this is the default message. See the <b>RTRV-ATTR-ENV</b> and <b>SET-ATTR-ENV</b> commands.
reset in progress	The network element is in progress of downloading its software from SYSMEM to SYSCTL, to TOHCTLs, and to all other circuit pack board controllers. Likely cause: Reset or <b>INIT-SYS</b> has been executed.
SER TLM 1 port failure	The serial telemetry 1 port has failed.
software download in progress	A software download to the SYSMEM is currently in progress.
SYSCTL failure	Failure of SYSCTL circuit pack.
SYSMEM failure	Failure of SYSMEM circuit pack.
SYSMEM removed	SYSMEM circuit pack is missing from slot.
SYSMEM/SYSCTL code mismatch	A software mismatch has been detected between the software stored in the SYSMEM circuit pack and the software version running in the network element. Likely cause: A software upgrade procedure is in progress.
SYSMEM unrecognizable code	The software stored in the SYSMEM circuit pack has become corrupted and is no longer usable. Likely causes: Corrupted software download to SYSMEM circuit pack or spontaneous corruption of the software in the SYSMEM circuit pack.
System incomplete	The designated Directory Server Network Element (DS-NE) network element is unable to create a complete ring map because of a controller or transmission failure in the network.
System startup in progress	This is a normally transient condition that indicates the network is starting up.
test alarm in progress	An office alarm test is in progress.
test auto turnup in progress	An auto turnup test is in progress.
test telemetry in progress	A telemetry test is in progress.
TID address map full	The local subnetwork has exceeded the maximum size of 16 network elements.
TL-1 link failure	An incoming TL1 link failure has been detected.
TLM failure	Failure of a TLM circuit pack.

**Alarm Condition Descriptions**

Description	Meaning
TLM removed	TLM circuit pack is missing from slot.
TOHCTL failure	Failure of TOHCTL circuit pack.
TOHCTL removed	TOHCTL circuit pack is missing from slot.
unexpected CP type	A circuit pack has been replaced with a defective circuit pack.

*tblislt* Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, the *tblislt* parameter is not reported.

**EXAMPLE OUTPUT**

```

LT-OLS 96-06-07 16:21:30
* 1 REPT ALM EQPT
  "tlm-1a:MN,PRCDRERR,NSA,06-07,16-21-30,,,,:\\"CP (Unknown type)
failure\\",:,ISLTD"
;
LT-OLS 96-06-07 16:23:18
A 2 REPT ALM EQPT
  "tlm-1a:CL,PRCDRERR,NSA,06-07,16-23-18,,,,:\\"CP (Unknown type)
failure-cleared\\",:,ISLTD"
;
LT-OLS 96-06-07 16:25:45
A 3 REPT ALM OLINE
  "oline-1a:MN,LOS,NSA,06-07,16-25-45,,,,:\\"incoming optical line
LOS\\",:"
;
LT-OLS 96-06-07 16:30:08
A 4 REPT ALM OLINE
  "oline-1a:CL,LOS,NSA,06-07,16-25-45,,,,:\\"incoming optical line
LOS-cleared\\",:"
;

```

**RELATED TL1 COMMANDS/MESSAGES**

None

## REPT ALM ENV

**REPT ALM ENV:** Report Alarm Environment

This autonomous message is available starting in OLS Release 1.0.

## DESCRIPTION

REPT ALM ENV messages are generated autonomously by the network element to inform the OS an environmental condition has been detected at the OLS.

If a miscellaneous discrete environmental point defaults to, or is provisioned to have, an alarm level of critical, major, or minor, the occurrence (and clearing) of that environmental point will be reported in a REPT ALM ENV message. If provisioned as a nonalarmed condition, a REPT EVT message is used to report the event.

For each miscellaneous discrete environmental condition reported to the OS via the REPT ALM ENV message, a corresponding REPT ALM ENV clearance message will be generated when the environmental condition clears.

## OUTPUT FORMAT

```
sid date time
almcde atag REPT ALM ENV
      "aid:ntfncde,almtype,ocrdat,ocrtm,\"almmsg\" "
;
```

## OUTPUT PARAMETERS

<i>sid</i>	Source identifier. This is the system name.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
<i>almcde</i>	Alarm code. This has one of the following values: <ul style="list-style-type: none"><li>*C Critical alarm</li><li>** Major alarm</li><li>* Minor alarm</li><li>A Automatic message (nonalarm) (This is used only to report a cleared alarm.)</li></ul>
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by OLS. OLS uses whole numbers from 000 through 999.
<i>aid</i>	Access identifier. This is the address of the miscellaneous discrete environmental point for which an alarm is being reported.

*ntfcncde* Notification code. This is the alarm level and has one of the following values:

- CR Critical alarm
- MJ Major alarm
- MN Minor alarm
- CL Cleared alarm

*almscncde* Alarm code. This is the alarm code and has one of the following values:

- MISC For miscellaneous discrete environmental conditions reported for near end terminals.
- REGR-MISC For miscellaneous discrete environmental conditions reported for far end terminals or repeater bay sites.

*ocrdat* Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).

*ocrtm* Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

*almsmsg* Alarm message. This is the text description of the reported condition. (the text description of the actual condition monitored and reported by each miscellaneous discrete environmental point can be provisioned by the user. The default is environment *n*.)

## EXAMPLE OUTPUT

```

LT-OLS 96-06-07 16:28:41
* 5 REPT ALM ENV
  "env-1:MN,MISC,10-26,16-25-48,\\\"provisioned environment alpt\\\"
;
LT-OLS 96-06-07 16:38:17
A 6 REPT ALM ENV
  "env-1:CL,MISC,10-26,16-27-35,\\\"provisioned environment
alpt-cleared\\\"
;

```

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-ALM-ENV**

**RTRV-ATTR-ENV**

**SET-ATTR-ENV**

## REPT COND

REPT COND: Report Condition

This autonomous message is available starting in OLS Release 1.0.

## DESCRIPTION

REPT COND messages are generated periodically and autonomously to report the active *status* conditions at the network element.

REPT COND messages are generated every 6 hours, that is, at 6:00 A.M., 12:00 Noon, 6:00 P.M. and 12:00 Midnight.

Each REPT COND message reports one active status condition similar to the autonomous REPT EVT message used to report each status condition (non-alarmed event) when it occurred.

Any status condition reported by an autonomous REPT EVT message, which is active when the periodic REPT COND messages are output, is included in a REPT COND message.

The information content of each REPT COND message is effectively equivalent to a line in the response to a **RTRV-COND** command.

## OUTPUT FORMAT

If there are no active status conditions to report, the following report is output:

```
sid date time
A atag REPT COND
;
```

If there are active status conditions to report, the following report is output:

```
sid date time
A atag REPT COND modifier
  "aid:ntfncde,condtype,srveff,ocrdat,ocrtm,,,\"conddescr\" "
;
```

## OUTPUT PARAMETERS

*sid* Source identifier (or Target identifier, *tid*). This is the system name.

*date* Date output message is generated. This has the format YY-MM-DD (year-month-day).

*time* Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).

<i>A</i>	This indicates the message is sent autonomously.
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element, on a per-OS-type basis. The network element uses only whole numbers from 000 through 999.
<i>modifier</i>	This is the message modifier to the REPT COND message and has one of the following values for OLS: <ul style="list-style-type: none"><li>COM Common. This reports a condition that is not an equipment or facility condition but Applies to the whole network element.</li><li>OCHAN Channel. This reports a facility-related condition at the channel level.</li><li>CMS CMS is the incoming customer maintenance signal [OC3 format]. This reports a facility-related event on the zcms part of the telemetry pack [OC3 format].</li><li>EQPT This reports an equipment-related condition for an OLS terminal or repeater bay.</li><li>OLINE This reports a facility-related event on the optical line.</li><li>SUPR This reports a facility-related event on the supervisory channel in the optical line.</li></ul>
<i>aid</i>	Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.
<i>ntfcncde</i>	Notification code. This parameter value is always NA (not alarmed) for status conditions.
<i>condtype</i>	Condition type. The values for this parameter can be found in the various RTRV-COND command pages associated with the <i>modifier</i> output in the message. For example, condition types associated with the COM <i>modifier</i> are listed in the RTRV-COND-COM command page.
<i>srveff</i>	Service effect. This indicates the effect of the reported condition on service. This parameter value is NSA (non-service-affecting) or SA (service-affecting) for status conditions.
<i>ocrdat</i>	Occurrence date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition description. This is the text description of the reported condition.  Alarm condition descriptions can be found in the REPT ALM message page.

## EXAMPLE OUTPUT

```
LT-PF-2000 93-10-01 06:00:00
A 810 REPT COND COM
  "env-1:NA,MISC,NSA,10-01,01-03-29,,,,,\"environment1\""
;
```

```
LT-OLS 94-06-07 16:28:41
A 820 REPT COND OLINE
  "oline-1a:NA,LOS,06-07,16-25-48,\\\"incoming optical line LOS\\\""
;
```

```
LT-OLS 94-06-26 16:25:48
A 830 REPT COND OCHAN
  "ochan-1a-1:NA,OCHANRMVD,06-26,16-25-48,\\\"incoming optical
channel removed\\\""
;
<
LT-FT-2000 94-06-26 16:27:35
A 810 REPT COND OC48
  "oc48-in-1e:NA,INHWP,06-26,16-27-35,\\\"line span lockout - FE\\\""
;
```

## RELATED TL1 COMMANDS/MESSAGES

REPT ALM

REPT EVT

**RTRV-ALM**

**RTRV-AO**

**RTRV-COND**

## REPT DBCHG

REPT DBCHG: Report Database Change

This autonomous message is available starting in OLS Release 1.0.

## DESCRIPTION

REPT DBCHG messages are generated by a network element to report database changes that have occurred as a result of line termination, STS-3 cross-connection, and performance monitoring parameter threshold provisioning commands.

REPT DBCHG messages are sent on all virtual circuits which have an OS\_TYPE allowing the receipt of REPT DBCHG autonomous messages. This will now include the virtual circuit which initiated the command that caused the database change.

The successful completion of commands from the network element which change the provisioning database or change the value of a CIT-provisionable parameter shall generate a REPT DBCHG message with the changed values listed in the output. If a provisionable value of a parameter was entered, and other optional parameter values were not entered, only the value of the parameter that was entered when the command was issued will appear in the REPT DBCHG output.

If an optional parameter was not entered, but the requirements state it must be set to a certain static default value, then that parameter value will be considered "entered". The value will be displayed in the output.

Controller reset: Any time the system controller resets (including on power-up), a REPT DBCHG message is transmitted after the controller has successfully recovered from the reset.

### ⇒ NOTE:

The user is logged out when the controller reset process begins. However, the user can relogin after couple of minutes of controller reset process initiation. The user will be able to see the REPT DBCHG message at the time it is sent only if the user has logged in again after a couple of minutes of controller reset initiation and before the completion of system controller reset. Otherwise, the user has to use the RTRV-AO message to see the REPT DBCHG stored in the buffer internally in the system.

### ⇒ NOTE:

OPS/INE will log the INIT-SYS, RESET, and UPDATE events but will not make any database changes. The OS craft will be responsible for requesting OPS/INE to run audits to check for OS/network element database discrepancies.

In addition to INIT-SYS, there are other commands which will cause the system to restart its program, and/or drop the user session. For these commands, the system should generate the report database change before the user session is terminated.

If the command only causes the user session to be dropped, and the REPT DBCHG message is not transmitted prior to the termination, the user can normally use the RTRV-AO command after relogging in to retrieve that REPT DBCHG message.

The following TL1 commands and equivalent CIT commands will trigger a REPT DBCHG message.

TL1 Command	CIT Command	Special Notes
CPY-PRGM	copy-program	
DLT-TADRMAP	delete-TID	
DLT-USER-SECU	set-login-delete	
ED-DAT	set-date	
ED-PID	set-password	<i>pid</i> must not be reported
ED-USER-SECU	set-login-change	
ENT-CID-SECU	set-security-port	
ENT-FECOM	enter-far end communication	
ENT-NE-SECU	set-security-network element	
ENT-CMS	set-CMS	
ENT-OCHAN	set-ochan	
ENT-SUPR	set-supr	
ENT-SYS	set-network element	
ENT-USER-SECU	set-login-enter	<i>pid</i> must not be reported
INIT-REG-OLINE	initialize-optics	
INIT-REG-ALL	initialize PM	
INIT-SYS	initialize-system,reset	
SET-ATTR-ALM	set-attribute-alarm	
SET-ATTR-CONT	set-attribute-control	
SET-ATTR-ENV	set-attribute-environment	
SET-ATTR-SUPR	set-supr	
SET-PM-STIME	set-pm-start time	
SET-SID	set-network element	
SET-TH-OCHAN	set-PM threshold-ochan	
SET-TH-OLINE	set-PM threshold-oline	
SET-TH-SUPR	set-PM threshold-supr	
UPD-SYS	update	

All commands can be categorized into three cases:

1. those that change the provisioning database;
2. those that change the state of the system (but not the database);
3. those that check the database or state of the system.

The commands that change the provisioning database (Case 1) will report a REPT DBCHG. The security commands, although not actually changing the provisioning database, should change a database and will also report a REPT DBCHG.

The following TL1 commands which are in Case 2 or Case 3, will not report a database change:

RTRV-xxx

TEST-xxx

ALW-/INH-MSG  
 OPR-/RLS-PROTNSW  
 OPR-/RLS-LPBK-xxx  
 OPR-/RLS-ACO  
 OPR-/RLS-EXT-CTL  
 ACT-/CANC-USER

## OUTPUT FORMAT

```

sid date time
A atag REPT DBCHG
  "umb:ccb:aid:[com_block]:[spec_block]:[state_block]"
;
```

Trailing commas after the last non-null parameter value within a parameter block are *not* included in the output message. Also, trailing colons after the last non-null parameter block are *not* included in the output message.

## OUTPUT PARAMETERS

<i>sid</i>	Source identifier (or Target identifier, <i>tid</i> ). This is the system name.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
A	This indicates the message is sent autonomously.
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element, on a per-OS-type basis. The network element uses only whole numbers from 000 through 999.
<i>umb</i>	Update Mangement Block. This parameter field is used for returning the time and date of the database change, and the source ID of the command that caused the change (when applicable). Parameters within the update mangement block are positionally independent and are specified using a name defined construct of: <b>PARAMETER=</b> <i>value</i> in a comma separated list. The parameters are listed and explained below.
	<b>TIME</b> This reflects the time that the database change occurred and is in the form: HH-MM-SS. The time is the same as the time that is in the REPT DBCHG message header.

	<b>DATE</b>	This reflects the date that the database change occurred and is in the form: YY-MM-DD. The date is the same as the date that is recorded in the history log for the database change record.
	<b>SOURCE</b>	If the database change occurs as a result of a TL1 command with a non-null <i>ctag</i> , the <b>SOURCE</b> field contains this non-null <i>ctag</i> value. Otherwise this parameter is not included in the message.
<i>ccb</i>		<p>Command Code Block. This is a single position defined parameter block which indicates the trigger information of the action which created the database update. If a TL1 command created this update, the command code parameter is specified in the form:</p> <p style="text-align: center;"><i>&lt;verb&gt;-&lt;modifier&gt;[-&lt;modifier&gt;]</i></p> <p>If the <i>&lt;verb&gt;</i> of the TL1 input command is <b>SET</b>, it is <b>not</b> reported as <b>ENT</b> in the command code block. The command code block must indicate the input verb <b>SET</b>.</p> <p>If the database change was caused by a user interface command or a button push caused the database change, the Command Code Block contains the equivalent TL1 command which would have had to have been entered to make the change.</p> <p>For controller reset, the <i>ccb</i> will be equal to <b>RESET</b>. For the UPDATE function, the <i>ccb</i> will be equal to <b>UPD-SYS</b>.</p>
<i>aid</i>		<p>Access identifier. This is the address of the object entity which the database update has affected.</p> <p>For line termination provisioning changes, this field contains the AID of the line which was provisioned.</p> <p>For system initialization, <b>RESET</b>, and <b>UPDATE</b> events, the AID field will be null.</p>
<i>com_block</i>		This field is always null.
<i>spec_block</i>		<p>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: <b>PARAMETER=value</b> in a comma separated list. The parameter names are the same as those for the corresponding TL1 command.</p> <p>All the database changes except the state change are reported in the <i>spec_block</i> as name-defined parameters (<b>PARAMETER=value</b>) whether or not the data was originally input as a position-defined parameter or name-defined parameter in the input command. The parameter names are the same as those for the corresponding TL1 command. If the input command used a name-defined parameter that causes a database change, then the <b>REPT DBCHG</b> will report it as a name-defined parameter in the specific block. If the input command used a position-defined parameter that causes a database change, then the <b>REPT DBCHG</b></p>

will report this position-defined parameter as a name-defined parameter (PARAMETER=value) in the specific block.

This field is null if the value in the *ccb* is one of: UPD-SYS, PLUGIN, or UNPLUG.

If the database change is the result of a (non-TL1) user interface command which contains parameters in this block, the equivalent TL1 parameter names and values are included in this block. The parameter names are the same as those for the corresponding TL1 command.

*state\_block* State Block. This is a position defined field. If a state change is being reported, the new state is included in this block. It contains the following parameters in the order shown:

*pst* Primary State.

## EXAMPLE OUTPUT

The following message is sent when the **ENT-SUPR** message has been completed for the supervisory channel 1a:

```
LT-OLS 93-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=93-10-01,SOURCE=123456:ENT-SUPR:supr-1a::
NTFCNCDE=MN,SDTHR=-6"
;
```

The following message is sent when the **SET-TH-OCHAN** message has been completed for the supervisory channel 1a:

```
LT-OLS 93-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=93-10-01,SOURCE=123456:SET-TH-OCHAN:ochan-1a-1::
MONTYPE=CVL,THLEV=-9,TMPER=15-MIN,TCARPT=ENABLE"
;
```

The following message is sent when the **SET-ATTR-CONT** message has been completed for the control point 3:

```
LT-PF-2000 93-10-01 08:00:00
A 888 REPT DBCHG
"TIME=07-59-20,DATE=93-10-01,SOURCE=123456:SET-ATTR-CONT:cont-3::
  CONTTYPE=\"StartGenerator\" "
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## REPT EVT

**REPT EVT:** Report Event

This autonomous message is available starting in OLS Release 1.0.

## DESCRIPTION

REPT EVT messages are generated autonomously by OLS to report events (nonalarmed conditions).

If an event with a user-provisionable alarm level defaults to or is provisioned as a not alarmed (NA) level, the occurrence of that event is reported in a REPT EVT message. REPT EVT messages also occur when any such standing conditions clear, and are used to report transient conditions. Beginning with OLS Release 1.0, autonomous performance monitoring (PM) threshold crossing alert (TCA) messages are provided to the OS using this TL1 message.

The following table indicates what TL1 will result in what REPT EVT messages.

TL1 Command	REPT EVT Message
RTRV-BASELINE	Rtrv-Baseline
TEST-ALM	Test-Alarm:slot()
TEST-AUTO-LOCAL	Test-Auto Turnup-Local:slot()
TEST-LED	Test-LED
TEST-TLM-PAR	Test-Telemetry-Parallel
ACT-USER	Activate-User
ALW-MSG	Allow-Message
CANC-USER	Cancel-User
CPY-PRGM	Copy-Program
DLT-TADRMAP	Delete-TID-Address Map
DLT-USER-SECU	Delete-User-Security
ED-DAT	Edit-Date
ED-PID	Edit-Password-ID
ED-USER-SECU	Edit-User-Security
ENT-CID-SECU	Enter-Channel ID-Security:port(com)
ENT-CMS	Enter-CMS:cms
ENT-FECOM	Enter-Far-End-Communications
ENT-NE-SECU	Enter-Network Element-Security
ENT-OCHAN	Enter-OCHAN:ochan
ENT-SUPR	Enter-SUPR:supr
ENT-SYS	Enter System
ENT-USER-SECU	Enter User Security
INH-MSG	Inhibit-Message
INIT-REG-ALL	Initialize-PM-Register
INIT-REG-OLINE	Initialize-Optics-Register
INIT-SYS (3)	Initialize-System

TL1 Command	REPT EVT Message
INIT-SYS (9)	Reset
OPR-ACO	Operate-Alarm-Cutoff
OPR-EXT-CONT	Operate-External-Control:misc disc(ctl)
RLS-EXT-CONT	Release-External-Control:misc disc(ctl)
RTRV-ALL	Rtrv-All
RTRV-ALM	Rtrv-Alarm (and Status)
RTRV-ALM-ENV	Rtrv-Alarm-Environment (and Status)
RTRV-ALM-NTWK	Rtrv-Alarm-Network
RTRV-AO	Rtrv-AO
RTRV-ATTR-ALM	Rtrv-Attr-Alarm
RTRV-ATTR-CONT	Rtrv-Attr-Control:point(cont)
RTRV-ATTR-ENV	Rtrv-Attr-Environment:point(env)
RTRV-ATTR-SUPR	Rtrv-Attr-SUPR:supr
RTRV-CID-SECU	Rtrv-Channel ID-Security:port(com)
RTRV-CMS	Rtrv-CMS:cms
RTRV-COND	Rtrv-Condition:slot()
RTRV-DAT	Rtrv-Date
RTRV-EQPT	Rtrv-Equipment:slot()
RTRV-FECOM	Rtrv-Far End Communications
RTRV-HDR	Rtrv-HDR
RTRV-LOG	Rtrv-Log
RTRV-MAP-NEIGHBOR	Rtrv-Map-Neighbor
RTRV-MAP-NETWORK	Rtrv-Map-Network
RTRV-MAP-RING	Rtrv-Map-Ring
RTRV-NE-SECU	Rtrv-Network Element-Security
RTRV-OCHAN	Rtrv-OCHAN:ochan
RTRV-OLINE	Rtrv-OLINE:oline
RTRV-PM-ALL	Rtrv-PM-All
RTRV-PM-OCHAN	Rtrv-PM-OCHAN:ochan
RTRV-PM-OLINE	Rtrv-PM-OLINE:oline
RTRV-PM-STIME	Rtrv-PM-Start Time
RTRV-PM-SUPR	Rtrv-PM-SUPR:supr
RTRV-RELSPR	Rtrv-RELSPR:oline
RTRV-STATE	Rtrv-State:slot()
RTRV-STATE-ALL	Rtrv-State-All
RTRV-SUPR	Rtrv-SUPR:supr
RTRV-SYS	Rtrv-System
RTRV-TH-ALL	Rtrv-Th-All
RTRV-TH-OCHAN	Rtrv-PM-Th-OCHAN:ochan
RTRV-TH-OLINE	Rtrv-PM-Th-OLINE:oline
RTRV-TH-SUPR	Rtrv-PM-Th-SUPR:supr

TL1 Command	REPT EVT Message
RTRV-USER-SECU	Rtrv-User-Security
SET-ATTR-ALM	Set-Attribute-Alarm
SET-ATTR-CONT	Set-Attribute-Control
SET-ATTR-ENV	Set-Attribute-Environment
SET-ATTR-SUPR	Set-Attribute-SUPR:supr
SET-PM-STIME	Set-PM-Start Time
SET-SID	Set-Network Element
SET-TH-OCHAN	Set-PM-Th-OCHAN:ochan
SET-TH-OLINE	Set-PM-Th-OLINE:oline
SET-TH-SUPR	Set-PM-Th-SUPR:supr
UPD-SYS	Update System

One and only one REPT EVT message is generated for each command.

## OUTPUT FORMAT

```

sid date time
A atag REPT EVT modifier
"aid:condtype,condeff,ocrdat,ocrtm,[locn],[dirn],[monval],
 [thlev],[tmper]:\"conddescr\",:[,tblislt]"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

- sid* Source identifier. This is the system name.
- date* Date output message is generated. This has the format YY-MM-DD (year-month-day).
- time* Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
- A* This indicates the nonalarmed message was sent autonomously.
- atag* Automatic tag. The *atag* is used for message sequencing. The number is incremented by one for each autonomous message sent. Whole numbers from 000 through 999 are used.
- modifier* This is a message modifier to the REPT EVT message and has one of the following values:
- COM Common. This reports an event that is not an equipment or facility condition but applies to the OLS as a whole. This is also used to report miscellaneous discrete environmental nonalarmed conditions.

OCHAN	Channel. This reports a facility-related event at the channel level in OLS.
CMS	CMS is the incoming customer maintenance signal [OC3 format.] This reports a facility-related event on the CMS part of the telemetry pack [OC3 format.]
EQPT	This reports an equipment-related event for an OLS.
OLINE	This reports a facility-related event on the optical line in OLS.
SUPR	This reports a facility-related event on the supervisory channel in the optical line in OLS.
<i>aid</i>	Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an event is being reported.
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions.  The values for this parameter can be found in the various <b>RTRV-COND</b> command pages associated with the <i>modifier</i> output in the message. For example, condition types associated with the <b>COM modifier</b> are listed in the <b>RTRV-COND-COM</b> command page.
<i>condeff</i>	Condition effect. This indicates the effect of the reported event on the condition of OLS and has one of the following values:  SC Standing Condition Raised. This is a condition that is active for an extended period of time.  TC Transient Condition. This is a condition that does not change the basic condition of the network element for an extended period of time. For example, a performance monitoring TCA message is reported as a transient condition.  CL Standing Condition Cleared. This is used to report when a standing condition no longer exists.
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>locn</i>	Location. This indicates whether the event being reported pertains to the near end or far end relative to the entity identified by the <i>aid</i> .  The <i>locn</i> may be null or have one of the following values:  NEND Near end event or TCA report.  FEND Far end event or TCA report.  The system will output a null value for the <i>locn</i> parameter <b>except</b> in cases where a TCA message is being generated. A null value is to be interpreted as meaning NEND.
<i>dirn</i>	Direction. This indicates the direction of the event being reported relative to the entity identified by the <i>aid</i> . The system will always provide a null entry for the <i>dirn</i> parameter.

<i>monval</i>	Monitored value. For performance monitoring TCAs, this is the measured value of the parameter specified in <i>condtype</i> (=T- <i>montype</i> ) at the time the REPT EVT TCA is reported. Otherwise this parameter is not reported.
<i>thlev</i>	Threshold level. If an incoming facility degradation or failure (or clear) is reported, the <i>thlev</i> parameter, applicable only for a message modifier of SUPR, is the BER threshold level, in integer form, representing the closest negative power of 10 to the BER.
<i>tmper</i>	Time period. For performance monitoring TCAs, this is the performance monitored time interval in which the reported threshold crossing event was observed. The values for this parameter are as follows:  15-MIN 15-minute interval 1-DAY daily interval  Otherwise this parameter is not reported.
<i>conddescr</i>	Condition description. This is the text description of the reported condition. The descriptions of PM TCAs are self explanatory and follow the parameter naming format specified in ANSI Draft Standard T1M1.3/92-005 (June 1992).
<i>tblislt</i>	Trouble isolated. If a reported condition is isolated to the reported <i>aid</i> , the <i>tblislt</i> parameter value is ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

## EXAMPLE OUTPUT

```
LT-OLS 96-06-07 16:28:41
A 7 REPT EVT OCHAN
   "ochan-1a-1:T-SPRC,TC,06-07,16-28-41,,,,:\\"TCA optics:Ochan QH:
   SPR-C"\\",:"
;
```

The following example is for an **OPR-LPBK-T3** command that has been denied.

```
LT-FT-2000 96-10-26 16:28:41
A 7 REPT EVT COM
   "LT01:IO-ACTY,TC,10-26,16-28-41,,,,:\\"operate-loopback-T3:
   line-1e-DENY"\\",:"
;
```

**RELATED TL1 COMMANDS/MESSAGES**

None

## RLS-EXT-CONT

**RLS-EXT-CONT:** Release External Control

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RLS-EXT-CONT** :*tid:aid:ctag*;

## DESCRIPTION

The **RLS-EXT-CONT** command can be initiated by users to release an external miscellaneous discrete control, such as a generator, a fan, a light, or a sprinkler. Miscellaneous discrete controls are operated by the **OPR-EXT-CONT** command.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. The <i>aid</i> identifies the external miscellaneous discrete control for which a description is being provisioned.  Entity: Single Point (Control) Legal Values: (CONT)-(1-36)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **RLS-EXT-CONT** request, the following normal completion response is returned.

```

sid date time
M ctag COMPLD
;

```

### OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

### EXAMPLE INPUT/OUTPUT

The following example shows a command for a PF-2000 system to release miscellaneous discrete control 1.

```

RLS-EXT-CONT:LT-PF-2000:CONT-1:123456::;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;

```

The following example shows a command for a linear PF-2000 system to release miscellaneous discrete control 4.

```

RLS-EXT-CONT:LT-PF-2000:CONT-4:123456::;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;

```

### ERROR RESPONSE

Refer to the **RTRV-HDR error responses** section. The error responses listed there also apply to this command.

If a **RLS-EXT-CONT** command is received with an invalid access identifier, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-ATTR-CONT**

**OPR-EXT-CONT**

**RTRV-ALM**

## RTRV-ALL

**RTRV-ALL:** Retrieve All

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-ALL:***tid:aid:ctag[:type];*

## DESCRIPTION

**RTRV-ALL** command messages can be initiated by a user to retrieve the current provisioned state of the Customer Maintenance Signal (CMS) port, supervisory (SUPR) channel, and optical channel (OCHAN) as well as the the current state of the CMS port, supervisory channel, and optical channel. This command retrieves all CMS port or supervisory channel or optical channel parameter settings that are provisionable via the **ENT-CMS**, **ENT-SUPR**, and **ENT-OCHAN** commands pertaining to the addressed OLS, reported one line per CMS port, supervisory channel, or optical channel. The **RTRV-ALL** command also retrieves the current state of the OLS supervisory channel.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the report is requested.  Entity: All Legal Values: (ALL)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-ALL** command, an output report is returned and is sorted as follows:

1. OCHAN data,
2. SUPR channel data,
3. CMS port data, and
4. by *aid* value.

```
sid date time
M ctag COMPLD
"ochan_aid:::pst"
"ochan_aid:::pst"
. . .
. . .
. . .
"ochan_aid:::pst"
"supr_aid:::[level,]ntfncode,sdthr"
"supr_aid:::[level,]ntfncode,sdthr"
. . .
. . .
. . .
"supr_aid:::[level,]ntfncode,sdthr"
"cms_aid:::[level,]ntfncode,sdthr:,sst"
"cms_aid:::[level,]ntfncode,sdthr:,sst"
. . .
. . .
. . .
"cms_aid:::[level,]ntfncode,sdthr:,sst"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

*level* Signal level. This parameter is the signal level type being supported by the CMS port or supervisory channel specified in the addressed slot (if equipped). If equipped, the *level* parameter is reported in LEVEL=xx format where xx has the following value:

OC3/STM1 This specifies that the CMS port signal or the supervisory channel is OC3/STM1 level.

No *level* value is reported for unequipped slots.

*ntfcncde*

Notification code. This parameter is the alarm level provisioned for failures of facilities serviced by the addressed port or slot. The *ntfcncde* parameter is reported in NTFNCNDE=*xx* format where *xx* has one of the following values:

CR	Critical
MJ	Major
MN	Minor
NA	Not alarmed
NR	Not reported (no autonomous report will be generated)
NO	Ignored (no autonomous or on-demand report will be generated)

*sdthr*

Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed supervisory channel. The *sdthr* parameter is reported in SDTHR=*xx* format where *xx* has one of the following values:

-9	This signifies that the signal degrade threshold is set at a BER of $10^{-9}$ .
-8	This signifies that the signal degrade threshold is set at a BER of $10^{-8}$ .
-7	This signifies that the signal degrade threshold is set at a BER of $10^{-7}$ .
-6	This signifies that the signal degrade threshold is set at a BER of $10^{-6}$ .
-5	This signifies that the signal degrade threshold is set at a BER of $10^{-5}$ .

Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed CMS port. The *sdthr* parameter for CMS port is always reported as SDTHR=-6.

*pst*

Primary state. This parameter reports the current primary state of the addressed optical channel (OCHAN). The *pst* will have one of the primary states supported by OLS.

The primary state for optical channel will have one of the following values:

IS	In service. This specifies that the optical channel addressed by <i>ochan_aid</i> is in the in service state.
OOS-MA-AS	Out of service, memory administration, assigned. This specifies that the optical channel addressed by <i>ochan_aid</i> is in the OLS "AUTO" state and will transition to in-service upon detection of a valid signal.

OOS	Out of service. This specifies that the optical channel addressed by <i>ochan_aid</i> is in the OLS "NMON" state.
RDNA	Requested data not available. If the requested <i>pst</i> data for the addressed optical channel is corrupted, this value is reported.
<i>sst</i>	<p>Secondary state. This parameter reports the current secondary state of the addressed CMS port. The <i>sst</i> will have one of the secondary states supported by OLS.</p> <p>The CMS port secondary state will have one of the following values:</p>
IS	In service. This specifies that the CMS port addressed by <i>cms_aid</i> is in the in service state in the <i>mux</i> (from the customer toward the optical line) direction.
OOS-MA-AS	Out of service, memory administration, assigned. This specifies that the CMS port addressed by <i>cms_aid</i> is in the OLS "AUTO" state and will transition to in-service upon detection of a valid incoming customer maintenance signal in the <i>mux</i> (from the customer toward the optical line) direction.
OOS	Out of service. This specifies that the CMS port addressed by <i>cms_aid</i> is in the OLS "NMON" state in the <i>mux</i> (from the customer toward the optical line) direction.
RDNA	Requested data not available. If the requested <i>sst</i> data for the addressed CMS port is corrupted, this value is reported.
<i>ochan_aid</i>	Optical Channel access identifier. This is the optical channel address for which output is being reported.
<i>supr_aid</i>	Supervisory channel access identifier. This is the supervisory channel address for which output is being reported.
<i>cms_aid</i>	CMS access identifier. This is the CMS port address for which output is being reported.

## EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

The example below shows the response to a query concerning all supervisory channels, all CMS ports, and all optical channels associated with all optical lines ("all").

```
rtrv-all:LT-OLS:all:123456;
```

```
IP 123456
```

```
<
```

```
LT-OLS 93-10-26 16:42:11
```

```
M 123456 COMPLD
```

```
"ochan-1a-1::::IS"
```

```
"ochan-1a-2::::IS"
```

```
"ochan-1a-3::::IS"
```

```
"ochan-1a-4::::IS"
```

```
"ochan-1a-5::::IS"
```

```
"ochan-1a-6::::IS"
```

```
"ochan-1a-7::::OOS-MA-AS"
```

```
"ochan-1a-8::::OOS-MA-AS"
```

```
. . .  
. . .  
. . .
```

```
"ochan-4b-1::::IS"
```

```
"ochan-4b-2::::IS"
```

```
"ochan-4b-3::::IS"
```

```
"ochan-4b-4::::IS"
```

```
"ochan-4b-5::::IS"
```

```
"ochan-4b-6::::IS"
```

```
"ochan-4b-7::::OOS-MA-AS"
```

```
"ochan-4b-8::::OOS-MA-AS"
```

```
"supr-1a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"supr-1b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"supr-2a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"supr-2b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"supr-3a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"supr-3b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"supr-4a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"supr-4b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"
```

```
"cms-1a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,IS"
```

```
"cms-1b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,IS"
```

```
"cms-2a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,IS"
```

```
"cms-2b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,IS"
```

```
"cms-3a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,IS"
```

```
"cms-3b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,IS"
```

```
"cms-4a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,OOS-MA-AS"
```

```
"cms-4b:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6,OOS-MA-AS"
```

```
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

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

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**ENT-CMS**

**ENT-OCHAN**

**ENT-OTPS**

**ENT-SUPR**

SET-ATTR-SUPR

## RTRV-ALM-ALL

**RTRV-ALM-ALL:** Retrieve Alarm All

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-ALM-ALL:tid:[aid]:ctag[::[ntfcncde],,,,,;
```

## DESCRIPTION

**RTRV-ALM-ALL** commands can be initiated by a user to retrieve all active alarms from a network element terminal. This command retrieves all active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (REPT ALM) conditions when they occur.

Any alarm condition reported by an autonomous REPT ALM or REPT ALM ENV message which is active when a **RTRV-ALM-ALL** command is received, is included in the **RTRV-ALM-ALL** response message.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#						
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  No value should be entered for this parameter. If a value is transmitted as part of this command, it will be ignored by the network element.						
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.						
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".  <table><tr><td><b>CR</b></td><td>Critical alarm (SONET only)</td></tr><tr><td><b>MJ</b></td><td>Major alarm (SONET only)</td></tr><tr><td><b>MN</b></td><td>Minor alarm (SONET only)</td></tr></table>	<b>CR</b>	Critical alarm (SONET only)	<b>MJ</b>	Major alarm (SONET only)	<b>MN</b>	Minor alarm (SONET only)
<b>CR</b>	Critical alarm (SONET only)						
<b>MJ</b>	Major alarm (SONET only)						
<b>MN</b>	Minor alarm (SONET only)						

<b>Prompt</b>	Prompt alarm (SDH only)
<b>Deferred</b>	Deferred alarm (SDH only)

If the *ntfncnde* is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

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

If there are alarm conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
  "aid,aidtype:ntfncnde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\",,:[,tblislt]"
. . . . .
. . . . .
. . . . .
  "aid,aidtype:ntfncnde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\",,:[,tblislt]"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.
<i>aidtype</i>	Access identifier type. This has one of the following values:  COM Common. This reports an alarm that is not an equipment or facility condition but applies to the network element as a whole.  OCHAN Channel. This reports a facility-related event at the channel level in OLS.  CMS CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.  EQPT This reports an equipment-related alarm for a network element terminal or repeater bay.  OLINE This reports a facility-related event on the optical line in OLS.  SUPR This reports a facility-related event on the supervisory channel in the optical line in OLS.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".  CR Critical alarm (SONET only) MJ Major alarm (SONET only) MN Minor alarm (SONET only) Prompt Prompt alarm (SDH only) Deferred Deferred alarm (SDH only)
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions.  The values for this parameter can be found in the various <b>RTRV-ALM</b> command pages associated with the <i>aidtype</i> output in the message. For example, condition types associated with the <b>COM</b> <i>aidtype</i> are listed in the <b>RTRV-ALM-COM</b> command page.
<i>srveff</i>	Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in

the REPT ALM message page.

*tblislt* Trouble isolated. If a reported condition is isolated to the reported *aid*, the *tblislt* parameter value is ISLTD to indicate that the *aid* identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-all:LT-OLS:all:123456;  
  
IP 123456  
  LT-OLS 94-06-07 16:42:11  
M 123456 COMPLD  
  "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical  
line LOS\\",,:"  
  "supr-4b,SUPR,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming supr chnl  
fail\\",,:"  
;
```

## ERROR RESPONSES

Refer to the RTRV-HDR error responses section. The error responses listed there apply to RTRV-ALM-ALL also.

## RELATED TL1 COMMANDS/MESSAGES

None



<b>MJ</b>	Major alarm (SONET only)
<b>MN</b>	Minor alarm (SONET only)
<b>Prompt</b>	Prompt alarm (SDH only)
<b>Deferred</b>	Deferred alarm (SDH only)

If the *ntfncnde* is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

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

If there are alarm conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfncnde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\" , , : [,tblislt]"
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfncnde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\" , , : [,tblislt]"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.
<i>aidtype</i>	Access identifier type.  CMS CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".  CR Critical alarm (SONET only) MJ Major alarm (SONET only) MN Minor alarm (SONET only) Prompt Prompt alarm (SDH only) Deferred Deferred alarm (SDH only)
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the CMS <i>aid</i> type are:  LOF Incoming customer signal loss-of-frame LOS Incoming customer signal loss-of-signal T-BERL Incoming customer signal SD/SF
<i>srveff</i>	Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.
<i>tblislt</i>	Trouble isolated. If a reported condition is isolated to the reported <i>aid</i> , the <i>tblislt</i> parameter value is ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-cms:LT-OLS:all:123456;  
  
IP 123456  
   LT-OLS 94-06-07 16:42:11  
M 123456 COMPLD  
   "cms-3b,CMS,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming CMS LOS\\" , , :"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If an **RTRV-ALM** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier, AID is missing, wrong or  
  inconsistent with modifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-ALM-COM

**RTRV-ALM-COM:** Retrieve Alarm Common

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-ALM-COM:***tid*[:*aid*]:*ctag*[::[*ntfcncde*],,,,,;

## DESCRIPTION

**RTRV-ALM\_COM** commands can be initiated by a user to retrieve all active alarms that are not specifically equipment- or facility-related conditions but apply to the network element as a whole. This command retrieves all active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm common (**REPT ALM COM**) conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM COM** or **REPT ALM ENV** message which is active when a **RTRV-ALM-COM** command is received, is included in the **RTRV-ALM-COM** response message.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  No value should be entered for this parameter. If a value is transmitted as part of this command, it will be ignored by the network element.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".
<b>CR</b>	Critical alarm (SONET only)
<b>MJ</b>	Major alarm (SONET only)

<b>MN</b>	Minor alarm (SONET only)
<b>Prompt</b>	Prompt alarm (SDH only)
<b>Deferred</b>	Deferred alarm (SDH only)

If the *ntfcncde* is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

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

If there are alarm conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\",,:[,tblislt]"
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\",,:[,tblislt]"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined as follows:

<i>aid</i>	Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.
<i>aidtype</i>	Access identifier type.
	COM Common. This reports an alarm that is not an equipment or facility condition but applies to the network element as a whole.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".
	<b>CR</b> Critical alarm (SONET only)
	<b>MJ</b> Major alarm (SONET only)
	<b>MN</b> Minor alarm (SONET only)
	<b>Prompt</b> Prompt alarm (SDH only)
	<b>Deferred</b> Deferred alarm (SDH only)
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions.
	The valid values for the condition type of the <b>COM</b> <i>aid</i> type are:
	ACOMAN Operate alarm cutoff
	ADMPFL TID address map full
	AGNE-COMF Alarm Group Network Element status communications failure
	BC-LAN-FAIL Board controller LAN failure
	CONTR Control processor failure or software download in progress
	DCC-INIT DCC start-up in progress
	DSNE-NR Directory Services Network Element not reachable
	DUPL-TID Duplicate TID defined
	EOC Incoming (from supervisory) DCC failure or remote communication failure
	FLT-CPY-SW-PRGM Copy program failed due to a fault
	INHMSG Inhibit autonomous messages to OS
	INIT-1 Initialize system
	INIT-2 Update system
	IO-ACTY Input/output activity
	IP-CPY-SW-PRGM Copy program in progress
	MAN User login/logout

MISC	Provisioned control point
MULT-DSNE	Multiple Directory Services Network Element defined
PIDEXPRD	Password expired
OACNFGMM	Single optical amplifier configuration mismatch
OAPMMM	Optical amplifier equippage/provisioned mode mismatch
OATYPMM	Optical amplifier types mismatch
OA-LAN-FAIL	Optical amplifier LAN failure
OK-CPY-SW-PRGM	Copy program has been successfully completed
OLINEIDMM	Optical line ID mismatch
PWR	Fus/power failure
RNG-INC	Ring incomplete
RNG-INITC	Ring startup in progress
SER-TLM1-FAIL	Serial telemetry port failure
SYSBOOT	Reset in progress
UIDDLT	Login deleted
UIDEXPRD	Login expired
<i>srveff</i>	Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.
<i>tblislt</i>	Trouble isolated. If a reported condition is isolated to the reported <i>aid</i> , the <i>tblislt</i> parameter value is ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-com:LT-OLS:all:123456;
```

```
IP 123456
```

```
LT-OLS 94-06-07 16:42:11
```

```
M 123456 COMPLD
```

```
"oline-3b,COM,MN,LOS,NSA,06-07,18-26-14,,:\\"optical line LOS\\",,:"
```

```
"t1m-4b,COM,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming (from OLS)
```

```
OC3 AIS\\",,:"
```

```
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-ALM-ENV

**RTRV-ALM-ENV:** Retrieve Alarm Environment

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-ALM-ENV:tid:[aid]:ctag::[ntfcncde][,];
```

## DESCRIPTION

**RTRV-ALM-ENV** commands can be initiated to retrieve active environmental alarm conditions from the network element. This command retrieves active environmental alarm conditions pertaining to the addressed network element in a line-by-line format, similar to the autonomous messages used to report environmental alarm conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM ENV** message, which is active when a **RTRV-ALM-ENV** command is received, is included in the **RTRV-ALM-ENV** response.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the environmental point(s), for example, <b>env-1</b> or <b>env-all</b> , for which the current alarm conditions are requested. The <i>aid</i> value may also be <b>all</b> or null (each of which is effectively equivalent to <b>env-all</b> ).  If the <i>aid</i> value is invalid, the network element responds without limiting the response based on the input <i>aid</i> , if any. Entity: Point (Environmental)  Legal Values: (ENV)-(ALL, 1-144)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current environmental alarms are requested, and it may have one of the following values: "CR", "MJ_Prompt", or "MN_Deferred".

<b>CR</b>	Critical alarm
<b>MJ_Prompt</b>	Major or Prompt alarm
<b>MN_Deferred</b>	Minor or Deferred alarm.

The default is to retrieve *all* alarm levels.

If the *ntfncnde* is valid, the network element's response is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element's response includes all alarm conditions.

### CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

### OUTPUT FORMAT

If there are no environmental alarms to report, the following response is returned:

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

If there are environmental alarms to report, the following output report is returned:

```
sid date time
M ctag COMPLD
"aid:ntfncnde,almtype,ocrdat,ocrtm,\"almmsg\" "
. . . . .
. . . . .
. . . . .
"aid:ntfncnde,almtype,ocrdat,ocrtm,\"almmsg\" "
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level, greatest to least.
2. By date and time, with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

<i>aid</i>	Access identifier. This is the address of the environmental alarm point being reported.
<i>ntfcncde</i>	Notification code. This is the alarm level and has one of the following values:  CR      Critical alarm MJ      Major alarm MN      Minor alarm Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".  CR                      Critical alarm (SONET only) MJ                      Major alarm (SONET only) MN                      Minor alarm (SONET only) Prompt                 Prompt alarm (SDH only) Deferred                Deferred alarm (SDH only)
<i>almtype</i>	Alarm type.
<i>ocrdat</i>	Occurrence date. This indicates the date of the condition being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the condition being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>almmsg</i>	Alarm message. This is the text description of the reported condition (the default is <code>environment n</code> ). The text description can be modified using the <b>SET-ATTR-ENV</b> command.

## EXAMPLE INPUT/OUTPUT

```
RTRV-ALM-ENV:LT-OLS:all:123456::MN;

IP 123456
<

LT-OLS 96-06-26 16:42:11
M 123456 COMPLD
"env-1:MN,MISC,08-18,16-30-00,\"provisioned environment alpt\" "
;
```

## **ERROR RESPONSES**

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **RTRV-ALM-ENV** command, also.

## **RELATED TL1 COMMANDS/MESSAGES**

REPT ALM ENV

**RTRV-ALM**

**SET-ATTR-ENV**

## RTRV-ALM-EQPT

**RTRV-ALM-EQPT**: Retrieve Alarm Equipment

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-ALM-EQPT :tid:[aid]:ctag[::[ntfcncde],,,,,;
```

## DESCRIPTION

**RTRV-ALM\_EQPT** commands can be initiated by a user to retrieve active alarms of equipment-related conditions from a network element terminal. This command retrieves all active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (**REPT ALM EQPT**) conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM EQPT** or **REPT ALM ENV** message which is active when a **RTRV-ALM-EQPT** command is received, is included in the **RTRV-ALM-EQPT** response message.

## INPUT PARAMETERS

*tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

*aid* Access identifier. *aid* determines slot address for this report.

Entity: All

Legal Values: (ALL)

Entity: Slot (TOHCTL)

Legal Values: (TOHCTL)

Entity: Slot (SYSCTL)

Legal Values: (SYSCTL)

Entity: Slot (SYSTEMEM)

Legal Values: (SYSTEMEM)

Entity: Slot (OA)

Legal Values: (OA)-(ALL, 1A-4B)

Entity: Slot (OU)

Legal Values: (OU)-(ALL, 1A-4B)

Entity: Slot (TLM) [End Terminals]

Legal Values: (TLM)-(ALL,1A,2A,3A,4A)

Entity: Slot (TLM) [Repeaters]

Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Shelf (OLS)  
Legal Values: (SHLF)-(ALL, 1-2)

*ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

*ntfcncde* Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".

<b>CR</b>	Critical alarm (SONET only)
<b>MJ</b>	Major alarm (SONET only)
<b>MN</b>	Minor alarm (SONET only)
<b>Prompt</b>	Prompt alarm (SDH only)
<b>Deferred</b>	Deferred alarm (SDH only)

If the *ntfcncde* is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

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

If there are alarm conditions to report, the following output report is returned to the

OS:

```

sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
. . . . .
. . . . .
. . . . .
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,,:
\"conddescr\",,:[,tblislt]"
;

```

### OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

- aid* Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.
- aidtype* Access identifier type.
  - EQPT** This reports an equipment-related alarm for a network element terminal or repeater bay.
- ntfcncde* Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".
  - CR** Critical alarm (SONET only)
  - MJ** Major alarm (SONET only)
  - MN** Minor alarm (SONET only)
  - Prompt** Prompt alarm (SDH only)
  - Deferred** Deferred alarm (SDH only)
- condtype* Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **EQPT** *aid* type are:
  - AUTORESET** Circuit pack reset in progress
  - CONTR** Control process failure
  - IMPROPRMVL** Improper circuit pack removal
  - OMUMISMTCH** Optical multiplexer/demultiplexer mismatch or missing

	ODUWRMUP	Optical demultiplexer warming up
	PRCDRERR	Unexpected circuit pack type
<i>srveff</i>	Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.	
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).	
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).	
<i>conddescr</i>	Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.	
<i>tblislt</i>	Trouble isolated. If a reported condition is isolated to the reported <i>aid</i> , the <i>tblislt</i> parameter value is ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.	

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-eqpt:LT-OLS:all:123456;  
  
IP 123456  
  LT-OLS 94-06-07 16:42:11  
M 123456 COMPLD  
  "t1m-3b,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"TLM removed\\" , , :"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If an **RTRV-ALM** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-ALM-NTWK

**RTRV-ALM-NTWK:** Retrieve Alarm Network

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**RTRV-ALM-NTWK:***tid::ctag;*

## DESCRIPTION

**RTRV-ALM-NTWK** command messages can be initiated by a user to retrieve a report of all network elements in the maintenance subnetwork with active alarm/or status conditions.

The information reported by the command may be misleading if the information is incomplete due to any of the following reasons:

- The OC-48 DCC channel in both the East and West direction is declared failed.
- Any OC-3 DCC channel in the local network element is declared failed.
- If "Remote Activity Reporting" is disabled.
- If one or more nodes are unreachable due to multiple failures.

This is because the report does not distinguish between missing entries and no entries due to no active alarms. To determine if the report is complete, please use this command in conjunction with **RTRV-MAP-NETWORK**, **RTRV-FECOM** and **RTRV-ALM**.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The information displayed by this command may be incomplete. Use the Retrieve-Map-Network (RTRV-MAP-NETWORK), Retrieve-Far\_End-

Communications (RTRV-FECOM), and Retrieve-Alarm-All (RTRV-ALM-ALL) commands for further details.

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned:

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

If there are alarm conditions to report, the following output report is returned:

```
sid date time
M ctag COMPLD
"ntfncnde,ocrdat,ocrtm,tid,prodtype,lcl_rng"
. . . . .
. . . . .
. . . . .
"ntfncnde,ocrdat,ocrtm,tid,prodtype,lcl_rng"
;
```

Applicable output lines are ordered as follows:

1. By highest alarm severity level CR, followed by MJ, followed by MN, followed by ABN, followed by NE\_ACTY.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

*ntfncnde* Notification code. This is the alarm level active at the network element for which the report is being generated. It can have one of the following values:

CR	Critical alarm
MJ	Major alarm
MN	Minor alarm

	ABN	Abnormal
	NE_ACTY	Near End Activity
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).	
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).	
<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#	
<i>prodtype</i>	Product Type. This gives the category of network element for which the report is being generated. It takes one of the following values.	
	DDM-OC3	This indicates that the reported TID is a DDM-2000 OC-3.
	DDM-OC12	This indicates that the reported TID is a DDM-2000 OC-12.
	DACS	This indicates that the reported TID is a DACS IV-2000.
	FTADR48	This indicates that the reported TID is an FT-2000 OC-48 ADR 2-fiber ring terminal.
	FTLCT	This indicates that the reported TID is an FT-2000 OC-48 4-fiber ring terminal.
	OLS	This indicates that the reported TID is an Optical Line System End Terminal or Repeater.
	FTADR192	This indicates that the reported TID is an FT-2000 OC-192 2-fiber ring terminal.
	OT	This indicates that the reported TID is an Optical Translator Network Element.
	SLC-2000	This indicates that the reported TID is a SLC-2000.
	FbrRch	This indicates that the reported TID is a Fiber Reach.
	?	This indicates that the reported TID is unknown or not one of the product types listed above.
<i>lcl_rng</i>	Local ring. This indicates whether or not the network element for which report is being generated represents a node in the local ring. It takes the value from the domain {yes,no}.	

**EXAMPLE INPUT/OUTPUT**

```
rtrv-alm-ntwk:LT-PF-2000::123456;  
  
IP 123456  
>  
  
LT-PF-2000 96-06-07.16:42:11  
M 123456 COMPLD  
"CR,06-07,16-10-14,abcdefgh1,DDM-OC3,no"  
"CR,06-07,16-26-14,abcdefgh,FTLCT,yes"  
"MJ,06-07,11-26-14,abcdefgh3,FTADR48,yes"  
"MJ,06-07,11-26-14,abcdefgh3-14,FTADR48,yes"  
"MJ,06-07,13-26-14,abcdefgh2,DDM-OC12,no"  
"MN,06-07,16-26-13,abcdefgh4,FTLCT,no"  
"ABN,06-07,16-29-14,abcdefgh5,SLC-2000,no"  
"ABN,06-07,16-29-14,abcdefgh6,FTLCT,no"  
"ABN,06-07,16-29-14,abcdefgh7,OLS,no"  
"ABN,06-07,16-29-14,abcdefgh8,OLS,no"  
"ABN,06-07,16-29-14,abcdefgh9,OT,no"  
"ABN,06-07,16-29-14,abcdefgh10,FTADR192,no"  
;
```

## ERROR RESPONSES

The network element returns the following error response if alarm reporting is temporarily disabled due to execution of CIT initiated Test-Auto Turnup-System command.

```
sid date time  
M ctag DENY  
SROF  
/* Status, Requested Operation Failed  
The system is temporarily busy, please try later  
*/  
;
```

## RELATED TL1 COMMANDS/MESSAGES

RTRV-MAP-NETWORK

RTRV-FECOM

RTRV-ALM

RTRV-ALM-ENV

## RTRV-ALM-OCHAN

**RTRV-ALM-OCHAN:** Retrieve Alarm Optical\_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-ALM-OCHAN:tid:[aid]:ctag[::[ntfcncde],,,,,;
```

## DESCRIPTION

**RTRV-ALM\_OCHAN** commands can be initiated by a user to retrieve active alarms that are facility-related events at the channel level for an OLS terminal. This command retrieves active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (**REPT ALM OCHAN**) conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM OCHAN** or **REPT ALM ENV** message which is active when a **RTRV-ALM-OCHAN** command is received, is included in the **RTRV-ALM-OCHAN** response message.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  Entity: Optical Channel  Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".
	<b>CR</b> Critical alarm (SONET only)
	<b>MJ</b> Major alarm (SONET only)

<b>MN</b>	Minor alarm (SONET only)
<b>Prompt</b>	Prompt alarm (SDH only)
<b>Deferred</b>	Deferred alarm (SDH only)

If the *ntfncnde* is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

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

If there are alarm conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfncnde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\" , , : [,tblislt]"
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfncnde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\" , , : [,tblislt]"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.
<i>aidtype</i>	Access identifier type. <b>OCHAN</b> Channel. This reports a facility-related event at the channel level in OLS.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred". <b>CR</b> Critical alarm (SONET only) <b>MJ</b> Major alarm (SONET only) <b>MN</b> Minor alarm (SONET only) <b>Prompt</b> Prompt alarm (SDH only) <b>Deferred</b> Deferred alarm (SDH only)
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the <b>OCHAN</b> <i>aid</i> type are: <b>LOS</b> Incoming optical channel loss-of-signal <b>OCHANDTCTD</b> Incoming optical channel detected <b>OCHANRMVD</b> Incoming optical channel removed <b>T-x</b> Threshold crossing alert for the indicated monitored parameter (x)
<i>srveff</i>	Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values: <b>SA</b> Service-affecting alarm condition. <b>NSA</b> Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.
<i>tblislt</i>	Trouble isolated. If a reported condition is isolated to the reported <i>aid</i> , the <i>tblislt</i> parameter value is ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

There will be no reported conditions/alarms for optical channels on the demux side of a single OA configuration.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-ochan:LT-OLS:all:123456;  
  
IP 123456  
   LT-OLS 94-06-07 16:42:11  
M 123456 COMPLD  
   "ochan-3b,OCHAN,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical  
channel LOS\\" , , :"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If an **RTRV-ALM** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier, AID is missing, wrong or  
inconsistent with modifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-ALM-OLINE

**RTRV-ALM-OLINE:** Retrieve Alarm Optical\_Line

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-ALM-OLINE:***tid:[aid]:ctag[::[ntfcncde],,,,,i*

## DESCRIPTION

**RTRV-ALM\_OLINE** commands can be initiated by a user to retrieve active alarms or facility-related events on the optical line. This command retrieves active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (**REPT ALM OLINE**) conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM OLINE** or **REPT ALM ENV** message which is active when a **RTRV-ALM-OLINE** command is received, is included in the **RTRV-ALM-OLINE** response message.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".
	<b>CR</b> Critical alarm (SONET only)
	<b>MJ</b> Major alarm (SONET only)
	<b>MN</b> Minor alarm (SONET only)

**Prompt** Prompt alarm (SDH only)  
**Deferred** Deferred alarm (SDH only)

If the *ntfcncde* is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

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

If there are alarm conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\" , , [,tblislt]"
. . . . .
. . . . .
. . . . .
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\" , , [,tblislt]"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.										
<i>aidtype</i>	Access identifier type. <b>OLINE</b> This reports a facility-related event on the optical line in OLS.										
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".  <table> <tr> <td><b>CR</b></td> <td>Critical alarm (SONET only)</td> </tr> <tr> <td><b>MJ</b></td> <td>Major alarm (SONET only)</td> </tr> <tr> <td><b>MN</b></td> <td>Minor alarm (SONET only)</td> </tr> <tr> <td><b>Prompt</b></td> <td>Prompt alarm (SDH only)</td> </tr> <tr> <td><b>Deferred</b></td> <td>Deferred alarm (SDH only)</td> </tr> </table>	<b>CR</b>	Critical alarm (SONET only)	<b>MJ</b>	Major alarm (SONET only)	<b>MN</b>	Minor alarm (SONET only)	<b>Prompt</b>	Prompt alarm (SDH only)	<b>Deferred</b>	Deferred alarm (SDH only)
<b>CR</b>	Critical alarm (SONET only)										
<b>MJ</b>	Major alarm (SONET only)										
<b>MN</b>	Minor alarm (SONET only)										
<b>Prompt</b>	Prompt alarm (SDH only)										
<b>Deferred</b>	Deferred alarm (SDH only)										
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the <b>OLINE</b> <i>aid</i> type are:  <table> <tr> <td><b>LOS</b></td> <td>Incoming optical line loss-of-signal</td> </tr> </table>	<b>LOS</b>	Incoming optical line loss-of-signal								
<b>LOS</b>	Incoming optical line loss-of-signal										
<i>srveff</i>	Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:  <table> <tr> <td><b>SA</b></td> <td>Service-affecting alarm condition.</td> </tr> <tr> <td><b>NSA</b></td> <td>Non-service-affecting alarm or status condition.</td> </tr> </table>	<b>SA</b>	Service-affecting alarm condition.	<b>NSA</b>	Non-service-affecting alarm or status condition.						
<b>SA</b>	Service-affecting alarm condition.										
<b>NSA</b>	Non-service-affecting alarm or status condition.										
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).										
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).										
<i>conddescr</i>	Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the <b>REPT ALM</b> message page.										
<i>tblislt</i>	Trouble isolated. If a reported condition is isolated to the reported <i>aid</i> , the <i>tblislt</i> parameter value is <b>ISLTD</b> to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported. The optical line alarms/conditions are correlated to the supervisory channel for optical line at the demux end of a single OA configuration.										

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-oline:LT-OLS:all:123456;  
  
IP 123456  
   LT-OLS 94-06-07 16:42:11  
M 123456 COMPLD  
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical  
line LOS\\",,:"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If an **RTRV-ALM** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
   IIAC  
   /* Input, Invalid Access Identifier, AID is missing, wrong or  
inconsistent with modifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-ALM-SUPR

**RTRV-ALM-SUPR**: Retrieve Alarm Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-ALM-SUPR:tid:[aid]:ctag[::[ntfcncde],,,,,;
```

## DESCRIPTION

**RTRV-ALM\_SUPR** commands can be initiated by a user to retrieve active alarms of facility-related events on the supervisory channel in the optical line. This command retrieves active alarms pertaining to the addressed network element terminal and upstream repeater bays, reported one line per condition, similar to the autonomous messages used to report alarm (**REPT ALM SUPR**) conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM SUPR** or **REPT ALM ENV** message which is active when a **RTRV-ALM-SUPR** command is received, is included in the **RTRV-ALM-SUPR** response message.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  Entity: Supervisory Channel (End Terminals) Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)  Entity: Supervisory Channel [Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".
	<b>CR</b> Critical alarm (SONET only)
	<b>MJ</b> Major alarm (SONET only)

<b>MN</b>	Minor alarm (SONET only)
<b>Prompt</b>	Prompt alarm (SDH only)
<b>Deferred</b>	Deferred alarm (SDH only)

If the *ntfcncde* is valid, the network element response to the user is limited to the specified notification code. If no notification code is provided or if the notification code is not valid, the network element response includes all alarm conditions.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no alarm conditions to report, the following message is returned to the OS:

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

If there are alarm conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\",,:[,tblislt]"
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,, :
\"conddescr\",,:[,tblislt]"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component, facility, or repeater bay site ID for which an alarm condition is being reported.
<i>aidtype</i>	Access identifier type.  SUPR This reports a facility-related event on the supervisory channel in the optical line in OLS.
<i>ntfcncde</i>	Notification code. This is the alarm level for which the current alarms are requested, and it may have one of the values: "CR", "MJ", "MN", "Prompt", or "Deferred".  <b>CR</b> Critical alarm (SONET only) <b>MJ</b> Major alarm (SONET only) <b>MN</b> Minor alarm (SONET only) <b>Prompt</b> Prompt alarm (SDH only) <b>Deferred</b> Deferred alarm (SDH only)
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the SUPR <i>aid</i> type are:  <b>APSB</b> DCC APS data error <b>FAIL</b> Incoming supervisory channel fail <b>T-x</b> Threshold crossing alert for the indicated monitored parameter (x) <b>T-BERL</b> Incoming supervisory channel SD/SF
<i>srveff</i>	Service effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter has one of the following values:  <b>SA</b> Service-affecting alarm condition. <b>NSA</b> Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	Condition description (or Alarm message). This is the text description of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.
<i>tblislt</i>	Trouble isolated. If a reported condition is isolated to the reported <i>aid</i> , the <i>tblislt</i> parameter value is ISLTD to indicate that the <i>aid</i> identifies the circuit pack that should be replaced by craft to correct the reported condition. Otherwise, this parameter is not reported.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-alm-supr:LT-OLS:all:123456;  
  
IP 123456  
   LT-OLS 94-06-07 16:42:11  
M 123456 COMPLD  
   "supr-3b,SUPR,MJ,LOS,SA,06-07,18-26-14,,:\\"incoming supr chnl  
LOS\\",,:"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If an **RTRV-ALM** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier, AID is missing, wrong or  
inconsistent with modifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-AO

**RTRV-AO:** Retrieve Autonomous\_Output

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-AO:***tid:[aid]:ctag[:::spec\_block];*

## DESCRIPTION

**RTRV-AO** commands can be initiated to request the network element to send copies of autonomous TL1 messages.

The content of the response to the **RTRV-AO** command depends on the OS-type assigned to the access channel, for example, the X.25 virtual circuit (VC), over which the command is received. The output is limited to the autonomous TL1 messages that are assigned to the same OS-type.

The network element saves autonomous TL1 messages in a separate file for each OS-type, thus the response to a **RTRV-AO** command is retrieved from the file for the *same OS-type only* that the **RTRV-AO** command came in on.

The copies of autonomous TL1 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, X.25 failures) or internal (for example, autonomous TL1 message output buffer overflow, no current login for the OS-type, or inhibited autonomous TL1 message reporting) conditions.

The network element saves a copy of each autonomous TL1 message to which an *atag* value is assigned per OS-type.

Whenever the *atag* sequence is reset for an OS-type, for example, due to system initialization or processor reset, the **RTRV-AO** log file for that OS-type is cleared.

The network element saves copies of the 50 most recent autonomous TL1 messages for the *memory administration* OS-type.

The network element saves copies of the 50 most recent autonomous TL1 messages for the *other* OS-type.

The network element saves copies of the 40 most recent autonomous TL1 messages for the *maintenance* OS-type.

The network element saves copies of the 50 most recent autonomous TL1 messages for the *restoration* OS-type.

## INPUT PARAMETERS

*tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

	[A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. Because the <b>RTRV-AO</b> log file is not filtered by <i>aid</i> , the <i>aid</i> value must be "ALL" or omitted. If this parameter is omitted, <b>ALL</b> is assumed.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>spec_block</i>	Specific block. Parameters included within the specific block are positionally independent and are specified using a name-defined construct of: <i>PARAMETER=value</i> . The specific block may have one, both or none of the following parameters specified within it in a comma-separated list. Furthermore, each parameter listed below can appear at most once within the specific block for a single <b>RTRV-AO</b> command. The use of the word "null" in the descriptions below imply that the parameter does not appear or appears with no value (for example, <b>ATAGSEQ=</b> , or <b>MSGTYPE=</b> ) in the command. The parameters are listed in alphabetic order.  <b>ATAGSEQ</b> Automatic tag sequence. This is the three-digit <i>atag</i> value of the autonomous TL1 messages requested. For example, " <b>ATAGSEQ=010</b> " specifies single <i>atag</i> value "010".  Two <i>atag</i> values may be specified by using an "&" (ampersand), for example, " <b>ATAGSEQ=010&amp;020</b> " specifies <i>atag</i> values "010" and "020".  A range of <i>atag</i> values may be specified by using "&&" (double ampersands), for example, " <b>ATAGSEQ=010&amp;&amp;020</b> " specifies <i>atag</i> values "010, 011, 012, ..., 020".  The network element's response to " <b>ATAGSEQ=001&amp;&amp;001</b> " is the same as for " <b>ATAGSEQ=001</b> " (or " <b>ATAGSEQ=001&amp;001</b> "), that is, to retrieve just <i>one</i> copy of the autonomous TL1 message with <i>atag</i> "001".  A wrap-around range of <i>atag</i> values may also be specified by using "&&" (double ampersands), for example, " <b>ATAGSEQ=998&amp;&amp;2</b> " specifies <i>atag</i> values "998, 999, 000, 001 and 002".  The network element's support of wrap-around ranges indicates that the order of input of <i>atag</i> values in ranges is significant.  Combinations of single ampersands (&) and double ampersands (&&) are not allowed in the same <b>ATAGSEQ</b> parameter specification.

If multiple or a range of *atag* values are specified by **ATAGSEQ**, but *some* of the *atag* values are not available in the network element's **RTRV-AO** log file, the network element responds with the *atag* values that *are* available within the specified **ATAGSEQ**. If no **ATAGSEQ** is specified (null), the response is not limited based on *atag* value.

**MSGTYPE** Message type. This is the type of autonomous messages requested. This parameter may be null or have one of the following values: "ALM", "COND", "EVENT", "DBCHG", or "SW".

**ALM** Report Alarm (including Report Alarm Environment)

**COND** Report Condition

**EVENT** Report Event

**DBCHG** Report Database Change

**SW** Report Switch

For example, **MSGTYPE=DBCHG** requests all **REPT DBCHG** autonomous messages.

If no **MSGTYPE** is specified (null), the response is not limited by the type of autonomous messages.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: **ATAGSEQ** can be 1) blank (don't filter on **ATAG**); 2) a number between 0 and 999 (provide output for specified **ATAG**); 3) 2 numbers between 0 and 999 separated by an ampersand (&) (provide output for 2 specified **ATAGS**); or 4) 2 numbers between 0 and 999 separated by two ampersands (&&) (provide output for specified range of **ATAGS**).

## OUTPUT FORMAT

If there are no autonomous messages to report, the following response is returned:

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

If the input **ATAGSEQ** *atag* or **MSGTYPE** values do not match any *atag* values or message types, respectively, in the network element's **RTRV-AO** log file, or if the **MSGTYPE** value does not match the TL1 autonomous message types provisioned for the OS-types of the current login session, the network element provides a normal completion response.

If there are autonomous messages to report, the following output report is returned:

```
sid date time
M ctag COMPLD
/*
complete autonomous messages except without the termination indicator (";")
*/
;
```

If there is more than one autonomous message to report, the autonomous messages are output in ascending (chronological) order by their *atag* values. The *order* of output is independent of the *order* of input of the **ATAGSEQ** *atag* values.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
RTRV-AO:LT-OLS::123456:::ATAGSEQ=11&012;

IP 123456
<

LT-OLS 96-08-18 16:42:11
M 123456 COMPLD
/*
LT-OLS 94-08-18 10:30:02
* 011 REPT EVT OCHNL
"ochnl-1a:SNRSD,SC,10-25,10-30-00:\\"TG3 failure\":,ISLTD"
LT-OLS 94-08-18 10:30:03
A 012 REPT SW
"tg-1,tg-2"
*/
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **RTRV-AO** command, also.

If the network element receives a **RTRV-AO** command with a non-null command code modifier [including any extra hyphens (-)], the following error response is returned:

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

If the network element receives a **RTRV-AO** command with an extra hyphen (-), the following error response is returned:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, Network Element does not support
command = xxxxxxxxxxxxxxxxxxxx */
;
```

where `xxxxxxxxxxxxxxxxxxxx` is the first 16 characters, or up to the end-of-message semicolon (;) if less than 16 characters, of the command received.

If the network element receives a **RTRV-AO** command with a non-null command code modifier, the following error response is returned:

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

If the network element receives a **RTRV-AO** command with an invalid `aid` value (that is, anything other than `a11` or null), the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

If the network element receives a **RTRV-AO** command with the same parameter specified more than once, the following error response is returned:

```
sid date time
M ctag DENY
IISP
/* Input, Invalid Syntax or Punctuation, parameter(s) multiply
defined */
;
```

If the network element receives a **RTRV-AO** command with an invalid **ATAGSEQ** value, the following error response is returned:

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

If the network element receives a **RTRV-AO** command with an invalid **MSGTYPE** value, (that is, an autonomous TL1 message type that the network element doesn't support), the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

REPT ALM

REPT ALM ENV

REPT COND

REPT DBCHG

REPT EVT

## RTRV-ATTR-ALM

**RTRV-ATTR-ALM:** Retrieve Attribute Alarm

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-ATTR-ALM:***tid::ctag;*

## DESCRIPTION

The **RTRV-ATTR-ALM** command can be initiated by general users to retrieve the values that have been set for incoming signal alarm delay (almdel), the alarm clear delay interval (clrdel). These parameters are explained in more detail below.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **RTRV-ATTR-ALM** request, the following normal completion response is returned.

```
sid date time
M ctag COMPLD
  "almdel=AlarmDelay", "clrdel=ClearDelay"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

<i>almdel</i>	is the value of the AlarmDelay (incoming signal alarm delay) parameter in seconds. It represents the time that the network element will wait, after it finds an incoming signal condition, before reporting it.
<i>clrdel</i>	is the value of the ClearDelay (alarm clear delay) parameter in seconds. It represents the time the network element will wait after a condition clears before reporting the changed condition.

## EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-ALM** command for a PF-2000 system where the AlarmDelay parameter has been provisioned to 11 seconds; the ClearDelay parameter has been provisioned to 9 seconds;

```
RTRV-ATTR-ALM:LT-PF-2000::123456;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
  "almdel=11", "clrdel=9"  
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## RELATED TL1 COMMANDS/MESSAGES

**SET-ATTR-ALM**

## RTRV-ATTR-CONT

**RTRV-ATTR-CONT:** Retrieve Attribute Control

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-ATTR-CONT :tid:aid:ctag[:[:[:]]];
```

## DESCRIPTION

The **RTRV-ATTR-CONT** command can be executed to retrieve the provisioned description(s) associated with an external control device or devices. These descriptions are used for information purposes when a user seeks to operate or release external miscellaneous discrete controls. For example, the user may want to verify that aid=CONT-1 is associated with a fan (and not a sprinkler) before operating it.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. The <i>aid</i> identifies the external miscellaneous discrete control for which attributes are being retrieved. An <i>aid</i> value must be provided.  Entity: Point (Control) Legal Values: (CONT)-(ALL, 1-36)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **RTRV-ATTR-CONT** request, the following normal completion response is returned.

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Parameters that specifically apply to this command response are defined below.

- tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:
- [A-Z][a-z][0-9].+-%#
- aid* Access Identifier. The aid identifies the external control for which the provisioned names are being retrieved. When the input *aid* is equal to CONT-ALL, the output is sorted by *aid*, with CONT-1 and its description printed first and CONT-2 second, etc.
- conttype* Control Type. The control type is the user provisioned description for the control identified by the aid. The description is enclosed with a pair of escaped quotes (\").

## EXAMPLE OUTPUT

The following example shows a **RTRV-ATTR-CONT** command to retrieve all the provisioned names for miscellaneous discrete controls for a PF-2000 system:

```
RTRV-ATTR-CONT:LT-PF-2000:CONT-ALL:123456::;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
  "cont-1:\startPump\  
  "cont-2:\startGenerator\  
  "cont-3:\startlights\  
  "cont-4:\control4\  
;
```

The following example shows a **RTRV-ATTR-CONT** command to retrieve the description of the first miscellaneous discrete control for a PF-2000 system:

```
RTRV-ATTR-CONT:LT-PF-2000:CONT-1:123456::;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
  "cont-1:\startpump\  
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If a **RTRV-ATTR-CONT** command is received with an invalid (or missing) access identifier, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or
inconsistent with modifier value */
;
```

## RELATED TL1 COMMANDS/MESSAGES

SET-ATTR-CONT

## RTRV-ATTR-ENV

**RTRV-ATTR-ENV:** Retrieve Attribute Environment

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-ATTR-ENV:** *tid:aid:ctag[::,];*

## DESCRIPTION

This command can be initiated to retrieve the alarm level and description parameters for each selected miscellaneous discrete environmental input point.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the environmental points for which attributes are requested. A value is required for this parameter. Entity: Point (Environmental)  Legal Values: (ENV)-(ALL, 1-144)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the retrieve attribute environment request, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "aid:ntfcncde,\"almmsg\" "
  .      .      .      .
  .      .      .      .
  .      .      .      .
  "aid:ntfcncde,\"almmsg\" "
i
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. The remainder of the output parameters are described below.

- aid* Access identifier. This is the address of the environmental point for which the attributes are reported.
- ntfcncde* Notification code. This is the alarm level associated with the addressed environmental point, and has one of the following values:
- CR** Critical alarm
  - MJ** Major alarm
  - MN** Minor alarm
  - NA** Not alarmed
  - NR** Not reported.
- almmsg* Alarm message. This is the condition description associated with the addressed environmental point. The description is an alphanumeric string, upper-case and lower-case characters (spaces are allowed), up to 26 characters. The description is enclosed within a pair of escaped quotes (\").

## EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-ENV** command to retrieve the tenth miscellaneous discrete environment parameter:

```
RTRV-ATTR-ENV:LT-FT-2000:env-10:123456;
```

```
IP 123456  
<
```

```
LT-FT-2000 93-10-26 16:42:11  
M 123456 COMPLD  
"env-10:MJ,\"environment 10\""  
;
```

The following example shows a **RTRV-ATTR-ENV** command to retrieve all of the miscellaneous discrete environment parameters:

```
RTRV-ATTR-ENV:LT-FT-2000:env-all:123456;
```

```
IP 123456  
<
```

```
LT-FT-2000 93-10-26 16:42:11  
M 123456 COMPLD  
"env-1:NA,\"open door\""  
"env-2:MN,\"high water\""  
"env-3:MN,\"high temperature\""  
"env-4:NA,\"generator started\""  
"env-5:CR,\"battery low\""  
"env-6:MJ,\"environment 6\""  
"env-7:NR,\"environment 7\""  
"env-8:MJ,\"environment 8\""  
"env-9:MJ,\"environment 9\""  
"env-10:MJ,\"environment 10\""  
"env-11:MJ,\"environment 11\""  
"env-12:MJ,\"environment 12\""  
"env-13:MJ,\"environment 13\""  
"env-14:MJ,\"environment 14\""  
"env-15:MJ,\"environment 15\""  
"env-16:MJ,\"environment 16\""  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **RTRV-ATTR-ENV** command, also.

If the network element receives a **RTRV-ATTR** command with an invalid command modifier, the following error response is returned:

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

If the network element receives an **RTRV-ATTR-ENV** command with an invalid or missing *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
  inconsistent with modifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**SET-ATTR-ENV**

## RTRV-BASELINE

**RTRV-BASELINE:** Retrieve Baseline

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 2.0.

## INPUT FORMAT

**RTRV-BASELINE:** *tid::ctag;*

## DESCRIPTION

This command is initiated by a user to request the network element to send the time and the reason for last baseline of the optical parameters of optical lines and the constituent optical channels through an **INIT-REG-OLINE** command. The baseline data reported will contain information for all IS optical channels and optical lines.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

After receiving a valid **RTRV-BASELINE** command, the following output message is returned:

```
sid date time
M ctag COMPLD
  "aid:time,baseline"
    .      .
    .      .
    .      .
  "aid:time,baseline"
i
```

Applicable output lines are ordered as follows:

1. By *aid* in following order of of IS optical lines (1a,1b,2a,2b,3a,3b,4a,4b)

If there is no data to return for the given valid **RTRV-BASELINE** command, the following message is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the IS optical line for which the BASELINE data is being reported. Baselining PM parameters of optical line imply baselining of PM parameters of the IS optical channels.
<i>time</i>	Time of Baseline. This is the time when baselining occurs in response to a valid <b>INIT-REG-OLINE</b> command. The format is "mm-dd-yy hh:mm"
<i>baseline</i>	Reason of baseline. The Reason of baseline includes the provisioned string from <b>INIT-REG-OLINE</b> command concatenated with the address of the entity which caused it.

## EXAMPLE INPUT/OUTPUT

In the following example, the command returns baseline report for optical lines 1a, 1b, 2a, 2b.

```
rtrv-baseline:LT-OLS::314152;  
  
IP 314152  
>  
  
LT-PF-2000 91-10-26 17:12:31  
M 314152 COMPLD  
"oline-1a:01-01-96 00:17,OCHAN_dropped:ochan-1a-1"  
"oline-1b:01-01-96 00:17,OCHAN_dropped:ochan-1b-1"  
"oline-2a:01-01-96 00:17,OA_replaced:oline-2a"  
"oline-2b:01-01-96 00:17,OA_replaced:oline-2b"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## RELATED TL1 COMMANDS/MESSAGES

**INIT-REG-OLINE**

## RTRV-CID-SECU

**RTRV-CID-SECU:** Retrieve Channel\_Identifier Security

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**RTRV-CID-SECU:***tid:aid:ctag;*

## DESCRIPTION

The **RTRV-CID-SECU** command can be initiated by users to retrieve the current CIT or TL1 port provisioning like, port status, timeout, port type or OS type information. Also this command gives the users currently logged on the network element.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This parameter specifies the port address for which the user wants to retrieve information.  Entity: Port (COM) Legal Values: (ALL, DCE, DTE, DCC, X25, SER_TLM1)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **RTRV-CID-SECU** request, the following normal completion response is returned.

```

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

```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

*aid* The *aid* is a port address.

*spec\_block* Specific block. Parameters within the specific block are positionally independent and are using a construct such as: *PARAMETER=value* in a comma-separated list. The specific block may have zero or more of the following parameters set within it. A parameter will not be displayed if it has no value. Furthermore, each parameter listed below may appear at most once within the specific block.

TMOUT	This parameter sets the time out interval for the DCE, DTE, and DCC ports. It has an integer value in the range 0-999 minutes. A value of 0 disables the time out mechanism. When a null value is provided, TMOUT is unchanged. For other ports, this parameter is reported as 'blank'.
PORTSTAT	This parameter gives the port status as provisioned. This parameter is reported for the DTE, DCE, Virtual channel 0 (vc-0) of DCC port, and the ser-tlm1 port.
BAUDRATE	This parameter gives the baud rate of the DTE port or DCE port as provisioned.  The BAUDRATE for DCC port is always reported as blank.  The BAUDRATE for x25 PVCs is always reported as blank.
CHAN	This parameter lists the permanent virtual channels(pvc-{1-2}) and the table entries from the calling address table for switched virtual channels (tbl-{1-16}) of X.25 port. It also lists the virtual channels (vc-{0-8}) for the DCC port.  This parameter is reported as 'blank' for 'dce' and 'dte' ports.
OSTYPE	This parameter gives the OS type for the virtual circuit of the X.25 port and the virtual channel (1-8) of DCC.

CALLADDR	<p>This parameter gives the calling address of the OS/user on the <b>svc</b> of the X.25 port.</p> <p>The calling address for all other ports(and associated virtual channels) is always reported as a blank.</p>
GNETID	<p>This parameter gives the tid of the gateway network element(GNE) for DCC virtual channels, vc 1-8.</p> <p>For all other entries, this parameter is reported as blank.</p>
UID	<p>This parameter gives the user ID of the user currently logged in the system.</p> <p>If no user is currently logged in at the time of the report, this parameter is reported as a 'blank'.</p>

### EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-CID-SECU** command for {aid=all}:

RTRV-CID-SECU:LT-PF-2000:all:123456;

IP 123456

<

LT-PF-2000 93-10-26 16:42:11

M 123456 COMPLD

"dce:TMOU=25,PORTSTAT=enabled,BAUDRATE=auto,UID=lt1"

"dte:TMOU=10,PORTSTAT=enabled,BAUDRATE=9600,UID=lt2"

"dcc:CHAN=vc\_0,TMOU=15,PORTSTAT=enabled,UID=lt3"

"dcc:CHAN=vc\_1,OSTYPE=ma,GNETID=another.gid1,UID=lt1"

"dcc:CHAN=vc\_2,OSTYPE=cmdr,GNETID=another.gid2,UID=lt2"

"dcc:CHAN=vc\_3,OSTYPE=rst,GNETID=another.gid3,UID=lt3"

"dcc:CHAN=vc\_4"

"dcc:CHAN=vc\_5"

"dcc:CHAN=vc\_6"

"dcc:CHAN=vc\_7"

"dcc:CHAN=vc\_8"

"x25:CHAN=pvc\_1,OSTYPE=mt,UID=NMA01"

"x25:CHAN=pvc\_2,OSTYPE=cmdr"

"x25:CHAN=svc\_1,OSTYPE=rst,CALLADDR=19089188888,UID=lt3"

"x25:CHAN=svc\_2"

"x25:CHAN=svc\_3"

"x25:CHAN=svc\_4"

"x25:CHAN=svc\_5"

"x25:CHAN=svc\_6"

"x25:CHAN=tbl\_1,OSTYPE=cmdr,CALLADDR=19089188888,UID=lt3"

"x25:CHAN=tbl\_2"

"x25:CHAN=tbl\_3"

"x25:CHAN=tbl\_4"

"x25:CHAN=tbl\_5"

"x25:CHAN=tbl\_6"

"x25:CHAN=tbl\_7"

"x25:CHAN=tbl\_8"

"x25:CHAN=tbl\_9"

"x25:CHAN=tbl\_10"

"x25:CHAN=tbl\_11"

"x25:CHAN=tbl\_12"

"x25:CHAN=tbl\_13"

"x25:CHAN=tbl\_14"

"x25:CHAN=tbl\_15"

"x25:CHAN=tbl\_16"

"Ser\_tlm1:PORTSTAT=enabled"

Screen continues on next page.

Screen continued from previous page.

;

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If the command is received with an invalid aid, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-CMS

**RTRV-CMS:** Retrieve Customer\_Maintenance\_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-CMS** :*tid:aid:ctag[:type]*;

## DESCRIPTION

**RTRV-CMS** command messages can be initiated by a user to retrieve the current provisioned state and current state of the Customer Maintenance Signal (CMS) port. This command retrieves all CMS port parameter settings that are provisionable via **ENT-CMS** commands pertaining to the addressed OLS, reported one line per CMS port.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the report is requested.  Entity: CMS Port [End Terminals] Legal Values: (CMS)-(ALL,1A,2A,3A,4A)  Entity: CMS Port [Repeaters] Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-CMS** command, the following output report is returned, sorted on CMS port data by the *cms\_aid* value.

```

sid date time
M ctag COMPLD
"cms_aid:::[level,]ntfncode,sdthr:,sst"
"cms_aid:::[level,]ntfncode,sdthr:,sst"
. . .
. . .
. . .
"cms_aid:::[level,]ntfncode,sdthr:,sst"
i

```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

<i>cms_aid</i>	CMS access identifier. This is the CMS port address for which output is being reported.		
<i>level</i>	Signal level. This parameter is the signal level type being supported by the CMS port or supervisory channel specified in the addressed slot (if equipped). If equipped, the <i>level</i> parameter is reported in LEVEL=xx format where xx has the following value:  <table> <tr> <td>OC3/STM1</td> <td>This specifies that the CMS port signal or the supervisory channel is OC3/STM1 level.</td> </tr> </table> <p>No <i>level</i> value is reported for unequipped slots.</p>	OC3/STM1	This specifies that the CMS port signal or the supervisory channel is OC3/STM1 level.
OC3/STM1	This specifies that the CMS port signal or the supervisory channel is OC3/STM1 level.		
<i>sdthr</i>	Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed CMS port. The <i>sdthr</i> parameter for CMS port is always reported as SDTHR=-6.		
<i>sst</i>	Secondary state. This parameter reports the current secondary state of the addressed CMS port. The <i>sst</i> will have one of the secondary states supported by OLS.  The CMS port secondary state will have one of the following values:  <table> <tr> <td>IS</td> <td>In service. This specifies that the CMS port addressed by <i>cms_aid</i> is in the in service state in the <i>mux</i> (from the customer toward the optical line) direction.</td> </tr> </table>	IS	In service. This specifies that the CMS port addressed by <i>cms_aid</i> is in the in service state in the <i>mux</i> (from the customer toward the optical line) direction.
IS	In service. This specifies that the CMS port addressed by <i>cms_aid</i> is in the in service state in the <i>mux</i> (from the customer toward the optical line) direction.		

OOS-MA-AS	Out of service, memory administration, assigned. This specifies that the CMS port addressed by <i>cms_aid</i> is in the OLS" AUTO" state and will transition to in-service upon detection of a valid incoming customer maintenance signal in the <i>mux</i> (from the customer toward the optical line) direction.
OOS	Out of service. This specifies that the CMS port addressed by <i>cms_aid</i> is in the OLS" NMON" state in the <i>mux</i> (from the customer toward the optical line) direction.
RDNA	Requested data not available. If the requested <i>sst</i> data for the addressed CMS port is corrupted, this value is reported.

## EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

The example below shows the response to a query concerning all CMS ports associated with all optical lines (*cms-all*) for an OLS repeater.

```
rtrv-cms:LT-OLS:cms-all:123456;  
  
IP 123456  
<  
  
LT-OLS 93-10-26 16:42:11  
M 123456 COMPLD  
"cms-1a::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"  
"cms-1b::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"  
"cms-2a::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"  
"cms-2b::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"  
"cms-3a::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"  
"cms-3b::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,IS"  
"cms-4a::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,OOS-MA-AS"  
"cms-4b::LEVEL=OC3,NTFCNCDE=MN,SDTHR=-6:,OOS-MA-AS"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

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

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

## RELATED TL1 COMMANDS/MESSAGES

ENT-CMS

## RTRV-COND-ALL

**RTRV-COND-ALL:** Retrieve Condition All

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-COND-ALL:***tid:[aid]:ctag:,,,i*

## DESCRIPTION

**RTRV-COND-ALL** commands can be initiated by an OS or OS users to retrieve the current state of the network element circuit pack slots and facilities. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM** or **REPT ALM ENV** message which is active; and any status condition reported by an autonomous **REPT EVT** message with *condeff=SC* (standing condition), which is active when a **RTRV-COND-ALL** message is received, is included in the **RTRV-COND-ALL** response message. Conditions provisioned with an alarm level of **NR** (not reported) are also included in the report even though they are not included in any **REPT EVT** autonomous messages.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. If provided at all, the <i>aid</i> for this command must be "ALL". If not provided, the value of "ALL" is assumed.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

```

sid date time
M ctag COMPLD
;

```

If there are status conditions to report, the following output report is returned to the OS:

```

sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
  \\ "conddescr\\" "
      .      .      .      .      .      .      .
      .      .      .      .      .      .      .
      .      .      .      .      .      .      .
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
  \\ "conddescr\\" "
;

```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No\_Alarm, followed by NR/No\_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

*aid* Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

*aidtype* Access identifier type. This has one of the following values:

COM Common. This reports a condition that is not an equipment or facility condition but applies to the network element as a whole.

OCHAN	Channel. This reports a facility-related event at the channel level in OLS.
CMS	CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.
EQPT	This reports an equipment-related condition.
OLINE	This reports a facility-related event on the optical line in OLS.
SUPR	This reports a facility-related event on the supervisory channel in the optical line in OLS.
<i>ntfcncde</i>	Notification code. This is the alarm level and has one of the following values: CR Critical MJ Major MN Minor NA Not alarmed NR Not reported
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions.  The values for this parameter can be found in the various <b>RTRV-COND</b> command pages associated with the <i>aidtype</i> output in the message. For example, condition types associated with the <b>COM</b> <i>aidtype</i> are listed in the <b>RTRV-COND-COM</b> command page.
<i>srveff</i>	Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values: SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>locn</i>	Location. The location field will always be empty for the network element <b>RTRV-COND</b> responses.
<i>dirn</i>	Direction. The direction field will always be empty for the network element <b>RTRV-COND</b> responses.
<i>tmper</i>	Time period. The time period field will always be null for the network element <b>RTRV-COND</b> responses.
<i>conddescr</i>	Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the <b>REPT ALM</b> message page.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-all:LT-OLS:all:123456;

IP 123456
   LT-OLS 94-06-07 16:42:11
M 123456 COMPLD
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\"",,:"
   "dcsupr-2b,COM,MN,EOC,NSA,06-07,18-26-14,,:\\"inc. (from Supr)
DCC failure\\"",,:"
;
```

## ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** error responses.

**RTRV-COND** messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

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

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

**RELATED TL1 COMMANDS/MESSAGES**

None

## RTRV-COND-CMS

**RTRV-COND-CMS**: Retrieve Condition Customer\_Maintenance\_Signal

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-COND-CMS**:*tid*:[*aid*]:*ctag*::,,,;

## DESCRIPTION

**RTRV-COND-CMS** commands can be initiated by an OS or OS users to retrieve status conditions of facility-related events on the CMS part of the telemetry pack [OC3 format]. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM CMS** or **REPT ALM ENV** message which is active; and any status condition reported by an autonomous **REPT EVT** message with *cond~~eff~~=SC* (standing condition), which is active when a **RTRV-COND-CMS** message is received, is included in the **RTRV-COND-CMS** response message. Conditions provisioned with an alarm level of **NR** (not reported) are also included in the report even though they are not included in any **REPT EVT** autonomous messages.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  Entity: CMS Port [End Terminals] Legal Values: (CMS)-(ALL,1A,2A,3A,4A)  Entity: CMS Port [Repeaters] Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)  Entity: CMS Port [End Terminals and Repeaters] Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

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

If there are status conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No\_Alarm, followed by NR/No\_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.
<i>aidtype</i>	Access identifier type.  CMS CMS is the incoming customer maintenance signal. This reports a facility-related event on the CMS part of the telemetry pack.
<i>ntfcncde</i>	Notification code. This is the alarm level and has one of the following values:  CR Critical MJ Major MN Minor NA Not alarmed NR Not reported Notification code. This is the alarm level and has one of the following values:  MJ Major (SONET) MN Minor (SONET) NA Not alarmed (SONET) NR Not reported (SONET) Prompt Prompt (SDH) Deferred Deferred (SDH) No_Alarm No Alarm (SDH) No_Report No Report (SDH)
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the CMS <i>aid</i> type are:  LOF Incoming customer signal loss-of-frame LOS Incoming customer signal loss-of-signal T-BERL Incoming customer signal SD/SF
<i>srveff</i>	Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).

<i>locn</i>	Location. The location field will always be empty for the network element <b>RTRV-COND</b> responses.
<i>dirn</i>	Direction. The direction field will always be empty for the network element <b>RTRV-COND</b> responses.
<i>tmper</i>	Time period. The time period field will always be null for the network element <b>RTRV-COND</b> responses.
<i>conddescr</i>	Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the <b>REPT ALM</b> message page.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-cms:LT-OLS:all:123456;

IP 123456
   LT-OLS 94-06-07 16:42:11
M 123456 COMPLD
   "cms-3b,CMS,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming CMS LOS\\" , , : "
;

```

## ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** error responses.

**RTRV-COND** messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

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

```

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-COND-COM

**RTRV-COND-COM:** Retrieve Condition Common

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-COND-COM:***tid:[aid]:ctag:,,,i*

## DESCRIPTION

**RTRV-COND-COM** commands can be initiated by an OS or OS users to retrieve all status conditions that are not specifically equipment- or facility-related conditions but apply to the network element as a whole. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM COM** or **REPT ALM ENV** message which is active; and any status condition reported by an autonomous **REPT EVT** message with *condeff=SC* (standing condition), which is active when a **RTRV-COND-COM** message is received, is included in the **RTRV-COND-COM** response message. Conditions provisioned with an alarm level of **NR** (not reported) are also included in the report even though they are not included in any **REPT EVT** autonomous messages.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. If the null value is specified in this parameter, this parameter becomes "COM".
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

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

If there are status conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No\_Alarm, followed by NR/No\_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

*aid* Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

*aidtype* Access identifier type.

COM	Common. This reports a condition that is not an equipment or facility condition but applies to the network element as a whole.
<i>ntfcncde</i>	Notification code. This is the alarm level and has one of the following values: CR Critical MJ Major MN Minor NA Not alarmed NR Not reported
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the COM <i>aid</i> type are: ACOMAN Operate alarm cutoff ADMPFL TID address map full AGNE-COMF Alarm Group Network Element status communications failure BC-LAN-FAIL Board controller LAN failure CONTR Control processor failure or software download in progress DCC-INIT DCC start-up in progress DSNE-NR Directory Services Network Element not reachable DUPL-TID Duplicate TID defined EOC Incoming (from supervisory) DCC failure or remote communication failure FLT-CPY-SW-PRGM Copy program failed due to a fault INHMSG Inhibit autonomous messages to OS INIT-1 Initialize system INIT-2 Update system IO-ACTY Input/output activity IP-CPY-SW-PRGM Copy program in progress MAN User login/logout MISC Provisioned control point MULT-DSNE Multiple Directory Services Network Element defined PIDEXPRD Password expired OACNFGMM Single optical amplifier configuration mismatch

	OAPMMM	Optical amplifier equipage/provisioned mode mismatch
	OATYPMM	Optical amplifier types mismatch
	OA-LAN-FAIL	Optical amplifier LAN failure
	OK-CPY-SW-PRGM	Copy program has been successfully completed
	OLINEIDMM	Optical line ID mismatch
	PWR	Fus/power failure
	RNG-INC	Ring incomplete
	RNG-INITC	Ring startup in progress
	SER-TLM1-FAIL	Serial telemetry port failure
	SYSBOOT	Reset in progress
	UIDDLT	Login deleted
	UIDEXPRD	Login expired
<i>srveff</i>		Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>		Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>		Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>locn</i>		Location. The location field will always be empty for the network element RTRV-COND responses.
<i>dirn</i>		Direction. The direction field will always be empty for the network element RTRV-COND responses.
<i>tmper</i>		Time period. The time period field will always be null for the network element RTRV-COND responses.
<i>conddescr</i>		Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.

**EXAMPLE INPUT/OUTPUT**

For an OLS Repeater

```
rtrv-cond-com:LT-OLS:all:123456;

IP 123456
   LT-OLS 94-06-07 16:42:11
M 123456 COMPLD
   "t1m-4b,COM,MN,EOC,NSA,06-07,18-26-14,,:\\"incoming (from OC3)
DCC failure\\" ,: "
;
```

## ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** error responses.

**RTRV-COND** messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

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

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-COND-EQPT

**RTRV-COND-EQPT**: Retrieve Condition Equipment

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-COND-EQPT:tid:[aid]:ctag:,,,;
```

## DESCRIPTION

**RTRV-COND-EQPT** commands can be initiated by an OS or OS users to retrieve status conditions of equipment-related events. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM EQPT** or **REPT ALM ENV** message which is active; and any status condition reported by an autonomous **REPT EVT** message with *condeff=SC* (standing condition), which is active when a **RTRV-COND-EQPT** message is received, is included in the **RTRV-COND-EQPT** response message. Conditions provisioned with an alarm level of **NR** (not reported) are also included in the report even though they are not included in any **REPT EVT** autonomous messages.

## INPUT PARAMETERS

*tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

```
[A-Z][a-z][0-9].+-%#
```

*aid* Access identifier. This is the address of the entity for which the current conditions are requested.

Entity: All

Legal Values: (ALL)

Entity: Slot (TOHCTL)

Legal Values: (TOHCTL)

Entity: Slot (SYSCTL)

Legal Values: (SYSCTL)

Entity: Slot (SYSTEMEM)

Legal Values: (SYSTEMEM)

Entity: Slot (OA)

Legal Values: (OA)-(ALL, 1A-4B)

Entity: Slot (OU)

Legal Values: (OU)-(ALL, 1A-4B)

Entity: Slot (TLM) [End Terminals]  
Legal Values: (TLM)-(ALL,1A,2A,3A,4A)

Entity: Slot (TLM) [Repeaters]  
Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Shelf (OLS)  
Legal Values: (SHLF)-(ALL, 1-2)

*ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

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

If there are status conditions to report, the following output report is returned to the OS:

```

sid date time
M ctag COMPLD
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
  \\ "conddescr\\" "
      .      .      .      .      .      .      .
      .      .      .      .      .      .      .
      .      .      .      .      .      .      .
  "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
  \\ "conddescr\\" "
;

```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No\_Alarm, followed by NR/No\_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

*aid* Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

*aidtype* Access identifier type.

*EQPT* This reports an equipment-related condition.

*ntfcncde* Notification code. This is the alarm level and has one of the following values:

CR Critical

MJ Major

MN Minor

NA Not alarmed

NR Not reported

*condtype* Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the **EQPT** *aid* type are:

AUTORESET Circuit pack reset in progress

CONTR Control process failure

	IMPROPRMVL	Improper circuit pack removal
	OMUMISMTCH	Optical multiplexer/demultiplexer mismatch or missing
	ODUWRMUP	Optical demultiplexer warming up
	PRCDRERR	Unexpected circuit pack type
<i>srveff</i>	Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values: SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.	
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).	
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).	
<i>locn</i>	Location. The location field will always be empty for the network element RTRV-COND responses.	
<i>dirn</i>	Direction. The direction field will always be empty for the network element RTRV-COND responses.	
<i>tmper</i>	Time period. The time period field will always be null for the network element RTRV-COND responses.	
<i>conddescr</i>	Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.	

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-eqpt:LT-OLS:all:123456;

IP 123456
  LT-OLS 94-06-07 16:42:11
M 123456 COMPLD
  "t1m-3b,EQPT,MJ,IMPROPRMVL,SA,06-07,18-26-14,,:\\"TLM removed\\" , , : "
;
```

## ERROR RESPONSES

Refer to the non-message-specific error responses listed in the RTRV-HDR error responses.

RTRV-COND messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a RTRV-COND command with a non-null invalid command modifier, the following error response is returned:

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

If a RTRV-COND command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-COND-OCHAN

**RTRV-COND-OCHAN:** Retrieve Condition Optical\_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-COND-OCHAN:***tid:[aid]:ctag:,,,i*

## DESCRIPTION

**RTRV-COND-OCHAN** commands can be initiated by an OS or OS users to retrieve status conditions of facility-related events at the channel level. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM OCHAN** or **REPT ALM ENV** message which is active; and any status condition reported by an autonomous **REPT EVT** message with *condeff=SC* (standing condition), which is active when a **RTRV-COND-OCHAN** message is received, is included in the **RTRV-COND-OCHAN** response message. Conditions provisioned with an alarm level of **NR** (not reported) are also included in the report even though they are not included in any **REPT EVT** autonomous messages.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  Entity: Optical Channel  Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

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

If there are status conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No\_Alarm, followed by NR/No\_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.  The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.
<i>aidtype</i>	Access identifier type.  OCHAN Channel. This reports a facility-related event at the channel level in OLS.
<i>ntfcncde</i>	Notification code. This is the alarm level and has one of the following values:  CR Critical MJ Major MN Minor NA Not alarmed NR Not reported
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the OCHAN <i>aid</i> type are:  LOS Incoming optical channel loss-of-signal OCHANDTCTD Incoming optical channel detected OCHANRMVD Incoming optical channel removed T-x Threshold crossing alert for the indicated monitored parameter (x)
<i>srveff</i>	Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>locn</i>	Location. The location field will always be empty for the network element RTRV-COND responses.
<i>dirn</i>	Direction. The direction field will always be empty for the network element RTRV-COND responses.
<i>tmper</i>	Time period. The time period field will always be null for the network element RTRV-COND responses.
<i>conddescr</i>	Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM message

page. There will be no reported conditions/alarms for optical channels on the demux side of a single OA configuration.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-ochan:LT-OLS:all:123456;

IP 123456
   LT-OLS 94-06-07 16:42:11
M 123456 COMPLD
   "ochan-3b,OCHAN,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
channel LOS\\" , , : "
;
```

## ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** error responses.

**RTRV-COND** messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

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

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

**RELATED TL1 COMMANDS/MESSAGES**

None

## RTRV-COND-OLINE

**RTRV-COND-OLINE:** Retrieve Condition Optical Line

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-COND-OLINE:tid:[aid]:ctag:,,,i
```

## DESCRIPTION

**RTRV-COND-OLINE** commands can be initiated by an OS or OS users to retrieve status conditions of facility-related events on the optical line. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM OLINE** or **REPT ALM ENV** message which is active; and any status condition reported by an autonomous **REPT EVT** message with *condeff=SC* (standing condition), which is active when a **RTRV-COND-OLINE** message is received, is included in the **RTRV-COND-OLINE** response message. Conditions provisioned with an alarm level of **NR** (not reported) are also included in the report even though they are not included in any **REPT EVT** autonomous messages.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

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

If there are status conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No\_Alarm, followed by NR/No\_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

*aid* Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.

The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.

<i>aidtype</i>	Access identifier type. OLINE This reports a facility-related event on the optical line in OLS.
<i>ntfcncde</i>	Notification code. This is the alarm level and has one of the following values: CR Critical MJ Major MN Minor NA Not alarmed NR Not reported
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the OLINE <i>aid</i> type are: LOS Incoming optical line loss-of-signal
<i>srveff</i>	Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values: SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>locn</i>	Location. The location field will always be empty for the network element RTRV-COND responses.
<i>dirn</i>	Direction. The direction field will always be empty for the network element RTRV-COND responses.
<i>tmper</i>	Time period. The time period field will always be null for the network element RTRV-COND responses.
<i>conddescr</i>	Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.

The optical line alarms/conditions are correlated to the supervisory channel for optical line at the demux end of a single OA configuration.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-oline:LT-OLS:all:123456;

IP 123456
   LT-OLS 94-06-07 16:42:11
M 123456 COMPLD
   "oline-3b,OLINE,MN,LOS,NSA,06-07,18-26-14,,:\\"incoming optical
line LOS\\",,:"
;
```

## ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** error responses.

**RTRV-COND** messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

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

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID is missing, wrong or
inconsistent with modifier */
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-COND-SUPR

**RTRV-COND-SUPR**: Retrieve Condition Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-COND-SUPR:tid:[aid]:ctag:,,,;
```

## DESCRIPTION

**RTRV-COND-SUPR** commands can be initiated by an OS or OS users to retrieve status conditions of facility-related events on the supervisory channel in the optical line. This command retrieves all active alarms and status ("non-alarmed" and "non-reported") conditions pertaining to the addressed network element, reported one line per condition, similar to the autonomous messages used to report alarm and non-alarmed conditions when they occur.

Any alarm condition reported by an autonomous **REPT ALM SUPR** or **REPT ALM ENV** message which is active; and any status condition reported by an autonomous **REPT EVT** message with *condeff=SC* (standing condition), which is active when a **RTRV-COND-SUPR** message is received, is included in the **RTRV-COND-SUPR** response message. Conditions provisioned with an alarm level of **NR** (not reported) are also included in the report even though they are not included in any **REPT EVT** autonomous messages.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the current conditions are requested.  Entity: Supervisory Channel (End Terminals) Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)  Entity: Supervisory Channel [Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there are no status conditions to report, the following message is returned to the OS:

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

If there are status conditions to report, the following output report is returned to the OS:

```
sid date time
M ctag COMPLD
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
. . . . .
. . . . .
. . . . .
"aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm,locn,dirn,tmper,
\\"conddescr\\" "
;
```

Applicable output lines are ordered as follows:

1. By alarm severity level MJ/Prompt, followed by MN/Deferred, followed by NA/No\_Alarm, followed by NR/No\_Report.
2. For conditions with the same alarm severity, by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the equipment component or facility for which a status condition is being reported.
<i>aidtype</i>	Access identifier type.  SUPR This reports a facility-related event on the supervisory channel in the optical line in OLS.
<i>ntfcncde</i>	Notification code. This is the alarm level and has one of the following values:  CR Critical MJ Major MN Minor NA Not alarmed NR Not reported
<i>condtype</i>	Condition type. This is the type of the condition. There are several types of conditions. The valid values for the condition type of the SUPR <i>aid</i> type are:  APSB DCC APS data error FAIL Incoming supervisory channel fail T-x Threshold crossing alert for the indicated monitored parameter (x) T-BERL Incoming supervisory channel SD/SF
<i>srveff</i>	Service effect (or Condition effect). This indicates the effect of the reported condition on service. This parameter has one of the following values:  SA Service-affecting alarm condition. NSA Non-service-affecting alarm or status condition.
<i>ocrdat</i>	Occurrence date. This indicates the date of the event being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the event being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>locn</i>	Location. The location field will always be empty for the network element RTRV-COND responses.
<i>dirn</i>	Direction. The direction field will always be empty for the network element RTRV-COND responses.
<i>tmper</i>	Time period. The time period field will always be null for the network element RTRV-COND responses.
<i>conddescr</i>	Condition description (or Alarm message). This is the text description [enclosed within a pair of escaped quotes (\")] of the reported condition. Alarm condition descriptions can be found in the REPT ALM message page.

## EXAMPLE INPUT/OUTPUT

For an OLS Repeater:

```
rtrv-cond-supr:LT-OLS:all:123456;  
  
IP 123456  
   LT-OLS 94-06-07 16:42:11  
M 123456 COMPLD  
   "supr-3b,SUPR,MJ,LOS,SA,06-07,18-26-14,,:\\"incoming supr chnl  
LOS\\",,:"  
;
```

## ERROR RESPONSES

Refer to the non-message-specific error responses listed in the **RTRV-HDR** error responses.

**RTRV-COND** messages and a valid *ctag* is recognized, the network element responds with **all** active status conditions.

If the network element receives a **RTRV-COND** command with a non-null invalid command modifier, the following error response is returned:

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

If a **RTRV-COND** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
  IIAC  
  /* Input, Invalid Access Identifier, AID is missing, wrong or  
inconsistent with modifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-DAT

**RTRV-DAT:** Retrieve Date

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

```
RTRV-DAT :tid::ctag;
```

## DESCRIPTION

The **RTRV-DAT** command can be initiated by all users to retrieve the date and daylight savings time provisioning information.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

When reporting the provisioning information report, the following output message is returned:

```
sid date time  
M ctag COMPLD  
" :OPDDB:ONDDB "  
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

<i>OPDDB</i>	The <i>OPDDB</i> is a position defined block to report various attributes. The format will be <i>value1,value2....</i> . All applicable attributes to be reported are as follows.  date            Date. <i>date</i> reports the current day in YY-MM-DD format.  time            Time. <i>time</i> reports the current time in HH-MM-SS format.
<i>ONDDB</i>	The <i>ONDDB</i> is a name defined block to report various attributes. The format will be <i>keyword1=value1,keyword2=value2....</i> . All applicable attributes to be reported are as follows.  tz              Standard Time Zone. <i>tz</i> reports the time zone designation outside of daylight savings time(i.e EST).  strtdst        Start Daylight Savings Time. <i>strtdst</i> is the date on which the one hour increment in the system time is to occur.  stopdst        Stop Daylight Savings Time. <i>stopdst</i> is the date on which one hour decrement in system time is to occur.  dstz            Daylight Savings Time Zone. <i>dstz</i> reports the time zone specification for the during Daylight Savings Time(that is, EDT).

## EXAMPLE OUTPUT

The following example shows a command **RTRV-DAT** for a network element.

```
rtrv-dat:LT-PF-2000::CTAG;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M CTAG COMPLD  
":93-10-26,16-42-11:TZ=EST,STRTDST=04-29,STOPDST=10-27,DSTZ=EDT"  
;
```

## **ERROR RESPONSE**

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## **RELATED TL1 COMMANDS/MESSAGES**

**ED-DAT**

## RTRV-EQPT

**RTRV-EQPT:** Retrieve Equipment

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-EQPT:** *tid:aid:ctag;*

## DESCRIPTION

This command is issued to the network element to retrieve the circuit pack and version number information for one or more slots.

When the network element receives an **RTRV-EQPT** command from the user, the network element will display the circuit pack and version number information for the requested slot(s).

Starting with OLS Release 2.0, the command provides information on OMU/ODU equipage as well for OLS End Terminals.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. <i>aid</i> determines slot address for this report.  Entity: All Legal Values: (ALL)  Entity: Slot (TOHCTL) Legal Values: (TOHCTL)  Entity: Slot (SYSCTL) Legal Values: (SYSCTL)  Entity: Slot (SYSTEMEM) Legal Values: (SYSTEMEM)  Entity: Slot (OA) Legal Values: (OA)-(ALL, 1A-4B)  Entity: Slot (OU) Legal Values: (OU)-(ALL, 1A-4B)  Entity: Slot (TLM) [End Terminals] Legal Values: (TLM)-(ALL,1A,2A,3A,4A)  Entity: Slot (TLM) [Repeaters] Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)

Entity: Shelf (OLS)  
Legal Values: (SHLF)-(ALL, 1-2)

*ctag*

Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

In response to a valid **RTRV-EQPT** command, the following output report is returned to the user.

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

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

*aid* Access identifier. This is the address of the slot and shelf for which equipage is being reported.

*spec\_block* Specific block. This parameter field is used for returning the current equipage information for the slot or quad. 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 parameters are listed and explained below.

If a parameter does not contain any information, the parameter and its field indicator (a comma) will not appear in the *spec\_block*.

It should be noted, however, that the network elements will return the parameter within the *spec\_block* in the following order.

TYPE, APP, SSN, CLEI, ECI, SLN, and VRSN

TYPE	Circuit pack type. This is the mnemonic name that identifies the general type function provided by the circuit pack. For example, optical line interface units are all named OU.
APP	Apparatus code. This parameter uniquely identifies the specific function provided by the circuit pack. Circuit packs with different APP are not interchangeable, even if they have the same name.
SSN	Series number. This parameter is used to indicate interchangeability among the circuit packs with the same circuit pack type and apparatus code, but different manufacturing versions. In general, a circuit pack can be replaced by another pack that has the same apparatus code and the same or later series number.  Note that the series number normally includes a colon (:). Since the colon is used as a TL1 field separator, a dash (-) is used instead.
CLEI	Common Language Equipment Identifier <sup>†</sup> . This parameter is a 10-character code identifying each circuit pack. Absence of demux end OA causes no data available condition for the OMU. Also, the OA 1A slot is not equipped in the Single OA configuration. Therefore, SYSCTL nor any other device will be able to read the CLEI. Circuit pack information is not readable for the CLEI.
ECI	Equipment catalog item. This parameter is a 6-character code identifying each circuit pack. This code corresponds to the bar-code label on the face-plate of the circuit pack, and is uniquely equivalent to CLEI.
SLN	Serial number. This parameter is a 12-character code uniquely identifying each circuit pack and indicating the date and place of manufacture.
VRSN	Program version. This parameter is the version of the software currently stored in the circuit pack.

The network element will include in its response equipage information on only equipped slots.

The network element will successfully complete the **RTRV-EQPT** command and return a **COMPLD** even if the *aid* in the command points to slot(s) that is/are not equipped.

---

<sup>†</sup> COMMON LANGUAGE is a registered trademark and CLEI, CLLI, and CLFI are trademarks of Bell Communication Research, Inc.

If the circuit pack in an equipped slot is removed, declared failed, or replaced with a pack of different type, the `TYPE` of the provisioned (removed/failed) circuit pack is retained and reported in the normal fashion except in some specific cases where it is reported as specified in other requirements in this document. The `CLEI` value is lost and is not reported. The `CLEI` is reported in some specific cases where error conditions are reported by the NE as specified in other requirements in this document.

When the `aid` of the slot in the input command is `SYSCTL` or `SYSTEMEM`, the network element will return the equipage information for both `SYSCTL` and `SYSTEMEM` `aids`.

The program version information is reported whenever the report includes information on a circuit pack on which a downloadable program is stored.

The order and syntax of the information for the `info` field is given as:

`ccccccc , aaaaaaaaa , sssss , nnnnnnnnnnnnn`

where,

`ccccccc`: is the Circuit pack type of the installed circuit pack if available, otherwise reported as a dash.

`aaaaaaaaa`: is the Apparatus Code of the installed circuit pack if available, otherwise reported as a dash.

`sssss`: is the Series Number of the installed circuit pack if available, otherwise reported as a dash.

`nnnnnnnnnnn`: is the Serial Number of the installed circuit pack if available, otherwise reported as a dash.

If the circuit pack in an equipped slot is replaced with a pack of different but known type, the `CLEI` field for that slot or quad will be set to `installed_CP_mismatch_(info)`, where `info` field contains any information available on the installed CP in the order of CP type, apparatus code, series number and serial number respectively separated by commas. If any one of these pieces of information is unavailable, a dash is reported in its place.

If the circuit pack in an equipped slot is replaced with a pack of different and unknown type, the `TYPE` field is set to the expected CP type and the `CLEI` field for that slot or quad is set to `installed_CP_unknown_(info)`, where `info` field contains any information available on the installed CP in the order of CP type, apparatus code, series number and serial number respectively separated by commas. If any one of these pieces of information is unavailable, nothing is reported.

If the CP in an equipped slot is removed, the `CLEI` is set to `CP_removed_complete_information_not_available`.

If the CP in an equipped slot is failed, and when the alternative pack is not identified by software, the `CLEI` is set to `installed_CP_failed_alternative_CP_information_not_available`.

If the CP in the slot specified by the `aid` in the user input command is declared failed and if the software is able to identify a single alternative CP to be replaced, then the `CLEI` will be set to `CP_failed_alternative_CP_(info)`, where `info` field contains any information available on the alternative CP in the order of slot address, CP type, and apparatus code respectively separated by commas. If any one of these three pieces of information is unavailable a dash is reported in its place.

## EXAMPLE INPUT/OUTPUT

The following OLS example requests the equipage information in the *SYSCTL* slot.

```
rtrv-eqpt:LT-OLS:sysctl:123456;

IP 123456
<

LT-OLS 93-10-26 16:42:11
M 123456 COMPLD
  "sysctl::TYPE=SYSCTL,APP=LAA23,SSN=12345,CLEI=1234567890,ECI=123456,
  SLN=123456789012,VRSN=OLS_RELEASE_x.y.z-OLS"
  "systemem::TYPE=SYSTEMEM,APP=LAA25,SSN=12345,CLEI=1234567890,ECI=123456,
  SLN=123456789012,VRSN=OLS_RELEASE_x.y.z-OLS"
;
```

The following OLS example requests a "1A-TX" terminal in single OA configuration.

```
rtrv-eqpt:LT-OLS:ou-all:123456;

IP 123456
<

LT-OLS 93-10-26 16:42:11
M 123456 COMPLD
  "OU-1a::TYPE=OU,CLEI=CP_not_readable"
  "OU-1b::TYPE=OU,APP=605A,SSN=12345,CLEI=1234567890,ECI=123456,
  SLN=123456789012"
  "OU-2a::TYPE=OU,CLEI=CP_not_readable"
  "OU-2b::TYPE=OU,APP=605A,SSN=12345,CLEI=1234567890,ECI=123456,
  SLN=123456789012"
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The requirements listed there apply to the **RTRV-EQPT** command also.

If the network element receives a **RTRV-EQPT** command without an *aid* or with an invalid *aid* the following error response is returned to the user:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-FECOM

**RTRV-FECOM:** Retrieve Far\_End\_Communications  
The privilege level for this command is REPORTS.  
The OSI category for this command is SECURITY.  
This command is available in OLS Release 2.0.

## INPUT FORMAT

**RTRV-FECOM:***tid::ctag;*

## DESCRIPTION

The **RTRV-FECOM** command can be initiated by general users to retrieve the provisioned state of network element's section data communication channel (DCC) as set by the **ENT-FECOM** command.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **RTRV-FECOM** request, the following far-end communication output report is given (details on parameter values are given below):

```
sid date time
M ctag COMPLD
  "::rar,roa"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below:

- rar* Remote activity reporting. This parameter indicates whether the remote activity reporting is enabled or disabled.
- roa* Remote office alarms. This parameter shows whether the remote office alarms are enabled or disabled.

## EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-FECOM** command output.

```
RTRV-FECOM:LT-PF-2000::123456;

IP 123456
<

LT-PF-2000 9-10-26 16:42:11
M 123456 COMPLD
  "::RAR=enabled,ROA=enabled"
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## RELATED TL1 COMMANDS/MESSAGES

**ENT-FECOM**

## RTRV-HDR

**RTRV-HDR:** Retrieve Header

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

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

## DESCRIPTION

**RTRV-HDR** commands can be initiated to request that the network element return a normal completion response.

### ⇒ NOTE:

This command may be used as a "keep-alive" signal.

## INPUT PARAMETERS

<i>tid</i>	<p>Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:</p> <p>[A-Z][a-z][0-9].+-%#</p> <p>The <i>tid</i> is a case insensitive character string of up to 20 characters. The allowed ASCII characters are letters "A" through "Z" and "a" through "z", numbers "0" through "9", and special characters: "#" (pound), "%" (percent), "+" (plus), "-" (hyphen), and "." (period).</p>
<i>ctag</i>	<p>Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.</p> <p>Valid values for <i>ctag</i> include strings of up to 6 characters comprised of identifiers (alphanumerics beginning with a letter) or decimal numerals (a string of decimal digits with an optional non-trailing ".").</p> <p>All position defined parameters (for example, <i>tid</i> and <i>ctag</i>) may be specified by a name=value format, or, as a value only. Therefore, <b>RTRV-HDR:LT-PF-2000::123</b>; and <b>RTRV-HDR:TID=LT-PF-2000::CTAG=123</b>; and <b>RTRV-HDR:TID=LT-PF-2000::123</b>; and <b>RTRV-HDR:LT-PF-2000::CTAG=123</b>; are equivalent.</p>

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

After receiving this command, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

<i>sid</i>	Source identifier (or Target identifier, <i>tid</i> ). This is the system name.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
M	This indicates the output message is generated in response to a manual command.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
COMPLD	This indicates that the command has been completed.

## EXAMPLE INPUT/OUTPUT

```
RTRV-HDR:LT-PF-2000::123456;
```

```
LT-PF-2000 94-10-26 16:42:11
M 123456 COMPLD
;
```

```
RTRV-HDR:LT-OLS::123456;
```

```
LT-OLS 94-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

The following error conditions are not unique to the **RTRV-HDR** command but may apply to any TL1 command received by the network element. When the TL1 security feature is enabled, the GNE only responds for another addressed network element if the user is logged into the GNE; however, a user does not have to be logged into the GNE to get an error response from a remote network element.

If network element receives a command, but cannot parse the command for at least 3 colons (:) before the TL1 end-of-message semicolon (;), instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the Gateway Network Element:

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

If network element receives a command, but can parse the command for more than the maximum number of colons (:) allowed for any supported TL1 command before the TL1 end-of-message semicolon (;), instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed network element:

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

If a GNE receives a command for which a *tid* value (non-null) is *required* but no *tid* value is included, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the GNE:

```
sid date time
M ctag DENY
  ICNV
  /* Input, Command Not Valid, TID must be specified */
;
```

If a GNE receives a command with a syntactically incorrect *tid* value, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the GNE:

```
sid date time
M ctag DENY
  IITA
  /* Invalid TID, unallowed characters or too long */
;
```

If a GNE receives a command (other than **RTRV-HDR**) with valid *tid* value but the addressed remote network element is temporarily unable to communicate with the GNE due to exhaustion of allocated resources at either the GNE or remote network element, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed network element:

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

If the network element receives a command but cannot recognize a valid *ctag* value, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed network element:

```
sid date time
M 0 DENY
  IICT
  /* Input, Invalid Correlation Tag (CTAG) */
;
```

If a GNE receives a command with an unknown *tid* value (a *tid* value that does not exist in the GNE's subnetwork), instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the GNE:

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

If a GNE receives a command with a valid *tid* value but the addressed remote network element is temporarily unable to communicate with the GNE, instead of returning an in-progress (IP) acknowledgement, the following error response is returned, using the *sid* value of the addressed remote network element:

```
sid date time
M ctag DENY
  IITA
  /* Communication Failure */
;
```

If a network element receives a TL1 command other than those supported, the following error response is returned, using the *sid* value of the addressed network element:

```
sid date time
M ctag DENY
ICNV
/* Input, Command Not Valid, Network Element does not support
   Command = xxxxxxxxxxxxxxxxxxxx */
;
```

where `xxxxxxxxxxxxxxxxxxxx` is the first 16 characters of the command received (up to, but excluding, the first colon [:], semicolon [;], or null [end of message indicator]).

When the TL1 security feature is enabled, if the network element receives a command requiring a privilege higher than that of the user issuing the command, the following error response is returned, using the `sid` value of the addressed network element:

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

If the network element receives any TL1 command (except `RTRV-PM`) for which it is unable to complete the request due to internal system processing problems, the following error response is returned, using the `sid` value of the addressed network element:

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

If a command is received with a `modifier` which is not one of the allowed modifiers for that command, the following error response is returned, using the `sid` value of the addressed network element:

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

If the network element receives a command with any extra (beyond the command-specific input format specification) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), or if a command with a name-defined parameter block includes an invalid parameter *name* label, the following error response is returned:

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

**⇒ NOTE:**

The network element does accept and ignore some extra non-null entries in some **RTRV** commands only.

If the network element receives a command with more than 256 characters, the following error response is returned:

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

If the network element strips out white space characters from all input commands before beginning to parse that command, it is acceptable if it applies the limit of 256 characters in a command after stripping out the white space characters.

The intent of this requirement is to limit the number of bytes that a TL1-GNE forwards over the DCC or IAO-LAN to a remote network element. The limit of 256 applies to the characters sent in this situation, so if the TL1-GNE strips out white space characters before forwarding, the actual number of accepted input characters

may be greater than 256.

If the X.25 interface of the TL1-GNE is provisioned for a packet size of 128 bytes, this requirement implies that the TL1-GNE will process the more-bit for input commands exceeding 128 characters including the white space characters.

## **RELATED TL1 COMMANDS/MESSAGES**

None

## RTRV-LOG

**RTRV-LOG:** Retrieve Log

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**RTRV-LOG:***tid::ctag;*

## DESCRIPTION

The **RTRV-LOG** command can be initiated by users to generate a history log for the NE. This report contains up to 500 of the most recent events. Events include the start and end of alarm and status conditions, and all craft/OS input activities that affect or would affect the state of the network element, successfully completed or denied.

The history log displays the events in last in-first out order, and each event is time stamped.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the command is accepted, the following output message is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	The <i>aid</i> is a source identifier. For user initiated commands the value is UID and for all other conditions the value is the source address of the event.
<i>opdpb</i>	The <i>OPDPD</i> is a position defined parameter block to report various attributes. The format will be <i>value1,value2.....</i> . All applicable attributes are reported.  The actual attributes reported are:  date            This is the date on which the event occurred. The format used is MM-DD.  Normally the events are displayed in order of date/time-stamp with the most recent event being displayed first and the oldest being displayed last. If the system clock is reset, however the date and time stamps may be displayed in monotonically decreasing order.  time            This is the time at which the event occurred. The format used is HH-MM-SS.  almvl           This is the alarm level of the system immediately after the event. It takes one of the following values: <ul style="list-style-type: none"><li>• CR</li><li>• MJ</li><li>• MN</li><li>• ABN</li><li>• NE_ACTY</li><li>• FE_ACTY</li></ul>

- (if\_no\_alarm\_conditions\_exist\_in\_the\_system)

The alarm level reported is not necessarily related to the event or condition described in the report entry. The alarm level reported is the highest alarm level active in the system when the condition is reported. The intention of the information in the history log is to give a system level record of events.

However, the alarm level reported for each condition listed in the Retrieve-Alarm output report is the alarm level associated with that particular condition. The intention of the information in the Retrieve-Alarm output report is to report the severity of EACH active condition so that intelligent priority calls can be made in those circumstances when multiple conditions are active.

evt\_desc This is a brief event description. The description must be enclosed using delimiters. The delimiter to be used is \" (that is, backslash followed by double-quotes). Alarm condition descriptions can be found in the REPT ALM message page.

## EXAMPLE OUTPUT

The following example shows a command **RTRV-LOG** for a network element.

```
rtrv-log:LT-PF-2000::123456;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
"t11-x25:01-01,00-06-20,MJ,\"Login:LT01\""
"cit-dce:01-01,00-05-40,MJ,\"Login:LT01\""
"oa-1b:01-01,00-02-48,MJ,\"OA failure-cleared\""
"t1m-1a:01-01,00-02-38,MJ,\"optical line ID mismatch\""
"system:01-01,00-02-31,MJ,\"reset in progress-cleared\""
"system:01-01,00-02-29,MJ,\"OLS system startup in progress\""
"dccsupr-1b:01-01,00-02-25,MJ,\"inc. (from Supr) DCC failure\""
"oline-3b:01-01,00-02-22,MJ,\"incoming optical line LOS\""
"oline-3a:01-01,00-02-22,MJ,\"incoming optical line LOS\""
"oline-2b:01-01,00-02-22,MJ,\"incoming optical line LOS\""
"oa-1b:01-01,00-02-21,MJ,\"OA failure\""
"system:01-01,00-00-08,MJ,\"reset in progress\""
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If a **RTRV-LOG** command is received when any **TEST-AUTO** command is being executed, then the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-MAP-NETWORK

**RTRV-MAP-NETWORK:** Retrieve Map Network

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-MAP-NETWORK:tid::ctag[::];
```

## DESCRIPTION

This command is issued to the network element to retrieve the list of all network elements in the local SONET subnetwork, including the communication status, capabilities, the product and NE types and alarm group of each network element reachable via the DCN (SONET DCC on either the optical interfaces or IAO-LAN) from the local network element (that is, the network element to which this command is issued).

When the network element receives a **RTRV-MAP-NETWORK** command from the user, the network element will return a report containing names (target identifiers, or TIDs) of every network element in the local SONET subnetwork (set of all network elements in the same DCC domain as the network element to which the command is addressed), communication status to each one of those network elements from the local network element, the product and network element types, capabilities and alarm group the systems in the local SONET subnetwork.



### CAUTION:

*If there is a duplicate **dsne** condition at the time that this command is executed at the addressed network element, the returned report could be incorrect. Be sure such error conditions do not exist while attempting this command.*

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

In response to a valid **RTRV-MAP-NETWORK** command, the following output report is returned to the user similar to the craft interface output.

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

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

*spec\_block* Specific block. This parameter field is used for returning the current equipage information for the slot. 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 parameters are listed and explained below.

<b>TID</b>	This is the target identifier of the network element. Refer to the <b>RTRV-HDR INPUT PARAMETERS</b> section. The character set requirements for <i>tid</i> listed there apply to the <b>TID</b> also. The <b>TID</b> is provisioned by the TL1 command <b>ENT-SYS</b> .
<b>DCCSTATUS</b>	This field can take on the values of <i>good</i> or <i>FAIL</i> and indicates the status of the Data Communications Channel from the local system. This field can be omitted from the output report if the <b>DCCSTATUS</b> is <i>good</i> for the identified systems.
<b>PRODTYPE</b>	Product Type. This field is part of the DIB record for each NE in the subnetwork.  PF 2000 NEs shall only output the values for DDM-OC3, DDM-OC12, FTLCT, FTADR48, FTADR192, OLS, DACS IV, SLC-2000, and FbrRch. Any other value shall be reported as a "?".
<b>NETYPE</b>	This field can take on the values of <i>DSNE</i> , <i>ASNE</i> , <i>DSNE/ASNE</i> or <i>-</i> (dash) and indicates whether or not the system identified in the <b>TID</b> is serving as the

Directory Service Network Element, as an Alarm Server, both or neither. This field can be omitted for the systems in the subnetwork that are not serving as either a **DSNE** or an **ASNE**.

**ALARMGRP** This field can take on integer values from 0 or 255 and indicates the Alarm Group, or SONET Maintenance Sub-Branch (SMSB), to which the listed network element belongs.

The Alarm Group identifies a set of network elements that exchange remote alarm information via one or more Alarm Gateway Network Elements. The value 0 is specially designated to mean the network element does not share alarm information with any other remote network elements.

Beyond placing the local NE first in the report, ordering of the report is a product-specific matter.

For a closed local (OLS) ring composed of repeaters and dual facing terminals only, the topmost entry in the network map report represents the OLS with the lowest NSAP followed by OLS neighbors connected to "nA" optical lines in transmit direction of side 1 for repeaters and side 2 of dual facing terminals until the ring is completed.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies n=1-4. Side 2 for dual facing terminal implies n=2,4 For an open local (OLS) ring, the topmost entry in the network map report represents an end terminal provisioned in "1A-TX" mode or "DUAL" mode with only side 2 equipped.. The topmost entry is followed by OLS neighbors connected to transmit direction of "nA" optical lines of side 1 for repeaters/end terminals (non-dual) and side 2 of dual facing terminals. The last entry should be an OLS end terminal in "1A-RCV" mode or "DUAL" mode with only side 1 equipped.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies n=1-4. Side 2 for dual facing terminal implies n=2,4. Side 1 for dual facing terminals implies n=1,3.

If an open or closed ring is incomplete, the ring map only reports the local node. This implies all other nodes in the incomplete ring will be displayed like nodes which are not part of local ring.

The other entries in the report represent all other network elements accessible via DCC channels (both OC-48 and OC-3) and / or Intra-Office LANs (IAO-LANs). The entries are sorted first by network element type with FTLCT listed first, followed by FTADR48, FTADR192, OLS, DDM-OC3, DDM-OC12, DACS IV, SLC-2000 and FbrRch, with unrecognized network elements (represented by a question mark) last. They are further sorted within each network element type by TID values in

alphabetical (ASCII) order.

Data which is unavailable for the report will be represented by a question ("?) mark (for example, DCCSTATUS=?).

## EXAMPLE INPUT/OUTPUT

The **RTRV-MAP-NETWORK** command is issued at ols-1. The OLS span consists of two end-terminals with three intermediate nodes:

```
rtrv-map-network:LT-PF-2000::123456;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
"TID=OLS-1,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=DSNE,ALARMGRP=56"  
"TID=OLS-2,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
"TID=OLS-3,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
"TID=OLS-4,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
"TID=OLS-5,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
;
```

The **RTRV-MAP-NETWORK** command is issued at ols-1. The OLS span consists of two end-terminals with three intermediate nodes, and there is a failure between two of the repeater sites.

```
rtrv-map-network:LT-PF-2000::123456;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
"TID=OLS-1,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=DSNE,ALARMGRP=56"  
"TID=OLS-2,DCCSTATUS=good,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
"TID=OLS-3,DCCSTATUS=FAIL,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
"TID=OLS-4,DCCSTATUS=FAIL,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
"TID=OLS-5,DCCSTATUS=FAIL,PRODTYPE=FT-2000,NETYPE=-,ALARMGRP=56"  
;
```

The following is an example with multiple other network elements present.

```
rtrv-map-network:LT-PF-2000::123456;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
" TID=LCT-1 ,DCCSTATUS=good ,PRODTYPE=FTLCT ,NETYPE=DSNE ,ALARMGRP=56 "
" TID=LCT-2 ,DCCSTATUS=good ,PRODTYPE=FTLCT ,NETYPE=- ,ALARMGRP=56 "
" TID=ADR-1 ,DCCSTATUS=good ,PRODTYPE=FTADR48 ,NETYPE=- ,ALARMGRP=57 "
" TID=ADR-2 ,DCCSTATUS=good ,PRODTYPE=FTADR48 ,NETYPE=- ,ALARMGRP=57 "
" TID=ADR-3 ,DCCSTATUS=good ,PRODTYPE=FTADR192 ,NETYPE=- ,ALARMGRP=5 "
" TID=OLS-1 ,DCCSTATUS=good ,PRODTYPE=OLS ,NETYPE=- ,ALARMGRP=55 "
" TID=OLS-2 ,DCCSTATUS=good ,PRODTYPE=OLS ,NETYPE=- ,ALARMGRP=55 "
" TID=OLS-3 ,DCCSTATUS=good ,PRODTYPE=OLS ,NETYPE=- ,ALARMGRP=55 "
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives a **RTRV-MAP-NETWORK** with an otherwise valid set of input parameter values but the command could not be completed by the network element, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**ENT-SYS**

**RTRV-SYS**

**RTRV-MAP-RING**

## RTRV-MAP-RING

**RTRV-MAP-RING:** Retrieve Map Ring

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-MAP-RING:***tid::ctag;*

## DESCRIPTION

This command generates a report listing all network elements in the local transmission ring.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

In response to a valid **RTRV-MAP-RING** command, the following output report is returned to the user.

```

sid date time
M ctag COMPLD
"spec_block"
. . . . .
. . . . .
"spec_block"
;

```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

*spec\_block* Specific block. This parameter field is used for returning the ring map information of the network. 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 parameters are listed and explained below.

It should be noted, however, that the network element will return the parameters within the *spec\_block* in the following order:

**TID, DSNE, DCCSTATUS, FBRCONN.**

**TID** This is the target identifier of the network element. Refer to the **RTRV-HDR INPUT PARAMETERS** section. The character set requirements for *tid* listed there apply to the **TID** also. The **TID** is provisioned by the TL1 command **ENT-SYS**.

**DSNE** This field can take on the values of *yes* or *no* and indicates whether or not the system identified in the **TID** is serving as the Directory Service Network Element.

**DCCSTATUS** This field can take on the values of *good* or *FAIL* and indicates the status of the Data Communications Channel from the local system.

**FBRCONN** Fiber Connection (FBRCONN) helps indicate the direction of traffic carried by optical line 1A in the OLS subnetwork. This field can take on values of {"1A-TX", "1A-RCV", "-", "DUAL"}.

This parameter indicates the direction of transmission for optical lines nA (n=1,4) at each OLS and is crucial in determining the order of entries in the report.

For a closed local (OLS) ring composed of repeaters and dual facing terminals only, the topmost entry in the network map report represents the OLS with the lowest NSAP followed by OLS neighbors connected to "nA"

optical lines in transmit direction of side 1 for repeaters and side 2 of dual facing terminals until the ring is completed.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies  $n=1-4$ . Side 2 for dual facing terminal implies  $n=2,4$ . For an open local (OLS) ring, the topmost entry in the network map report represents an end terminal provisioned in "1A-TX" mode or "DUAL" mode with only side 2 equipped.. The topmost entry is followed by OLS neighbors connected to transmit direction of "nA" optical lines of side 1 for repeaters/end terminals (non-dual) and side 2 of dual facing terminals. The last entry should be an OLS end terminal in "1A-RCV" mode or "DUAL" mode with only side 1 equipped.

All optical lines in a side have the same orientation:

- For transmission
- Relative to TLM packs

Side 1 for repeaters implies  $n=1-4$ . Side 2 for dual facing terminal implies  $n=2,4$ . Side 1 for dual facing terminals implies  $n=1,3$ .

For incomplete open or closed OLS rings, only the local node shall be displayed in the report. If, at the OLS end terminal where optical amplifier 1A is receiving traffic, the DIRN value is not 1A-RCV or DUAL and/or the supervisory channels on lines 1A (and 2A in DCC protected configurations) are not entering the telemetry packs, then incoming DCC failure is declared at that end terminal.

In single OA configuration, the supervisory channel on lines 1B is entering telemetry pack in 1A-RCV or DUAL mode.

When this condition exists, the DCCSTATUS and FBRCONN parameters for this end terminal take on the values "FAILED" and "?", respectively, in the reports at all other nodes whose ring maps include the end terminal.

Data which is unavailable for the report will be represented by a question ("?") mark (for example, DCCSTATUS=?).

## EXAMPLE OUTPUT

The following OLS example requests the map of an OLS ring. The **RTRV-MAP-RING** command is issued at ols-1, which is also provisioned in "1A-TX" mode. The sub-network consists of two end-terminals with two intermediate nodes:

```
rtrv-map-ring:ols-1::123456;

IP 123456
<

OLS-1 94-06-15 12:28:133
M 123456 COMPLD
  "TID=OLS-1,DSNE=yes,DCCSTATUS=good,FBRCONN=1A-TX"
  "TID=OLS-2,DSNE=no,DCCSTATUS=good,FBRCONN=-"
  "TID=OLS-3,DSNE=no,DCCSTATUS=good,FBRCONN=-"
  "TID=OLS-5,DSNE=no,DCCSTATUS=good,FBRCONN=1A-RCV"
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives a **RTRV-MAP-RING** with an otherwise valid set of input parameter values but the command could not be completed by the network element, the following error response is returned to the user:

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-MAP-NETWORK**

## RTRV-NE-SECU

**RTRV-NE-SECU:** Retrieve Network\_Element Security

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**RTRV-NE-SECU:***tid::ctag;*

## DESCRIPTION

The **RTRV-NE-SECU** command can be initiated by users to retrieve network element global security information. The user can determine whether logins are allowed, whether the password aging interval is set and its value, and whether the login aging interval is set and its value.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there is provisioned security information to report, the following output message is returned:

```
sid date time
M ctag COMPLD
":,:ONDPB"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

### *ONDPB*

The *ONDPB* is a name defined parameter block to report various attributes. The format will be *keyword1=value1,keyword2=value2. . . .* All applicable attributes are reported.

<i>alw_uid</i>	Allow user ID. This parameter shows whether or not non-expert logins are allowed to login or not. Expert logins are always allowed. This parameter can take one of the values: "YES", or "NO".
<i>page</i>	Password aging interval. This parameter shows the password lifetime interval in days. It can take a value between 7 and 999 days, or 0. The value 0 indicates that the password aging mechanism is disabled.
<i>uout</i>	User ID aging interval. This parameter shows the period in days during which each general or report-only user should login at least once to retain the login. It can take a value between 7 and 999 days, or 0. The value 0 indicates that the login aging mechanism is disabled.

## EXAMPLE OUTPUT

```
rtrv-ne-secu:LT-PF-2000::123456;  
  
IP 123456  
<  
  
LT-PF-2000 94-03-22 16:12:12  
M 123456 COMPLD  
": ,:ALW_UID=Yes ,PAGE=60 ,UOUT=90 "  
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## RELATED TL1 COMMANDS/MESSAGES

**ENT-NE-SECU**

## RTRV-OCHAN

**RTRV-OCHAN:** Retrieve Optical\_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-OCHAN:***tid:aid:ctag[:type];*

## DESCRIPTION

**RTRV-OCHAN** command messages can be initiated by a user to retrieve the current provisioned state and current state of the optical channel (OCHAN). This command retrieves all optical channel parameter settings that are provisionable via **ENT-OCHAN** commands pertaining to the addressed OLS, reported one line per optical channel.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the report is requested.  Entity: Optical Channel  Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-OCHAN** command, the following output report is returned, sorted on OCHAN data, by the *ochan\_aid* value.

```
sid date time
M ctag COMPLD
"ochan_aid:::pst"
"ochan_aid:::pst"
. . .
. . .
. . .
"ochan_aid:::pst"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

*ochan\_aid* Optical Channel access identifier. This is the optical channel address for which output is being reported.

*pst* Primary state. This parameter reports the current primary state of the addressed optical channel (OCHAN). The *pst* will have one of the primary states supported by OLS.

The primary state for optical channel will have one of the following values:

IS	In service. This specifies that the optical channel addressed by <i>ochan_aid</i> is in the in service state.
OOS-MA-AS	Out of service, memory administration, assigned. This specifies that the optical channel addressed by <i>ochan_aid</i> is in the OLS "AUTO" state and will transition to in-service upon detection of a valid signal.
OOS	Out of service. This specifies that the optical channel addressed by <i>ochan_aid</i> is in the OLS "NMON" state.
RDNA	Requested data not available. If the requested <i>pst</i> data for the addressed optical channel is corrupted, this value is reported.

## EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

The example below shows the response to a query concerning all optical channels associated with optical line 1a ("ochan-1a-all").

```
rtrv-ochan:LT-OLS:ochan-1a-all:123456;

IP 123456
<

      LT-OLS 93-10-26 16:42:11
M 123456 COMPLD
  "ochan-1a-1::::IS"
  "ochan-1a-2::::IS"
  "ochan-1a-3::::IS"
  "ochan-1a-4::::IS"
  "ochan-1a-5::::IS"
  "ochan-1a-6::::IS"
  "ochan-1a-7::::OOS-MA-AS"
  "ochan-1a-8::::OOS-MA-AS"
  "ochan-1a-9::::IS"
  "ochan-1a-10::::RDNA"
  "ochan-1a-11::::IS"
  "ochan-1a-12::::RDNA"
  "ochan-1a-13::::IS"
  "ochan-1a-14::::IS"
  "ochan-1a-15::::OOS-MA-AS"
  "ochan-1a-16::::RDNA"

;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

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

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

## RELATED TL1 COMMANDS/MESSAGES

ENT-OCHAN

## RTRV-OLINE

**RTRV-OLINE:** Retrieve Optical\_Line

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 2.1.

## INPUT FORMAT

**RTRV-OLINE:***tid:aid:ctag[:type];*

## DESCRIPTION

**RTRV-OLINE** command messages can be initiated by a user to retrieve the channel loading factor (CLF) on all in-service (IS) optical lines.

The measured power output level needs to be calibrated with information about the number of channels as well as the type of channels in the system. The selection of the LBO depends on this information.

This command allows a user to see the current channel loading factor (CLF). The CLF will be calculated by the network element to provide an index into an installation LBO table. This index may be used to identify the correct LBO value in conjunction to other required parameters of the channel being added.

The **RTRV-OLINE** command will allow a user to see the channel loading factor (CLF) on all in-service (IS) optical lines. The equation to compute the CLF is

$$\text{CLF} = 3 * (\text{Number of OC3/OC12/Generic BT channels present [400-700 Mb/s range]}) + 8 * (\text{Number of OC48 channels present}).$$

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the report is requested.  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

In response to a valid **RTRV-OLINE** command, the following output report is returned, sorted by the *oline\_aid* value.

```
sid date time
M ctag COMPLD
"oline_aid::clf"
"oline_aid::clf"
. . . . .
. . . . .
. . . . .
"oline_aid::clf"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

*oline\_aid* Optical line access identifier. This is the optical line address for which output is being reported.

*clf* Channel Loading Factor. This parameter is the channel loading factor (CLF) threshold for the facility serviced by the addressed optical line port. The *clf* parameter is reported in **CLF=xxx** format.

For single OA configuration, installation procedures will require an upstream login to find the channel loading factor at the mux end OA.

If an OA is not present or if an OA is failed, then the reported value for CLF will be a dash ("-").

## EXAMPLE INPUT/OUTPUT

The example below shows the response to a query concerning all optical lines with all OC3/OC12 channel ("*oline-all*") data.

```
rtrv-oline:LT-PF-2000:oline-all:789012;

IP 789012
<

      LT-PF-2000 93-10-26 16:42:11
M 789012 COMPLD
  "oline-1a::CLF=48"
  "oline-1b::CLF=48"
  "oline-2a::CLF=48"
  "oline-2b::CLF=48"
  "oline-3a::CLF=48"
  "oline-3b::CLF=48"
  "oline-4a::CLF=48"
  "oline-4b::CLF=48"
;

```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

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

```

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

## RELATED TL1 COMMANDS/MESSAGES

## RTRV-PM-ALL

**RTRV-PM-ALL:** Retrieve Performance\_Monitoring All  
The privilege level for this command is REPORTS.  
The OSI category for this command is PERFORMANCE.  
This command is available beginning in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-PM-ALL:tid:aid:ctag::[montype],[monlev],[locn],  
[dirn],[tmper],[mondatt][,montm];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

### ⚠ WARNING:

Use of this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-STS-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

This command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with all facilities of any type.

Performance monitoring data is retrieved for all optical channels, optical lines, and the supervisory signal in an OLS.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the facility for which the performance-monitoring data is requested.  Entity: All Legal Values: (ALL)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a

string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

*montype*

This is the PM parameter type for which PM data is requested.

This parameter must be specified for one of the following values:

- LBC-P1 (Laser Bias Current for Pump 1)
- LBC-P2 (Laser Bias Current for Pump 2)
- LBFC-P1 (Laser Backface Current for Pump 1)
- LBFC-P2 (Laser Backface Current for Pump 2)
- TOPR-OL (Total Received Power - Optical Line)
- SPR-C (Optical Channel Signal Power)
- CVL (Coding violation count - Line Near End)
- ESL (Errored second count - Line Near End)
- SESL (Severely errored second count - Line Near End)
- UASL (Unavailable second count - Line Near End)
- SPR-SU (Signal power - Supervisory)
- LBC-SU (Laser Bias Current - Supervisory)
- ALL (all applicable montype values)

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

*monlev*

Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

**1-UP** A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

**0-UP** A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

**⇒ NOTE 1:**

All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

**⇒ NOTE 2:**

Several Optical PM montypes should be reported regardless of what the input monlev parameter value is. The monlev parameter (0-up and 1-up) does not apply to optical parameters LBC, LBC-P1, LBC-P2, LBFC-P1 and LBFC-P2 because they are represented as a fractional number ("real-valued") and is non-zero in the nominal case.

<i>dirn</i>	<p>Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ".</p> <p><b>NA</b>            Not applicable (default).</p> <p><b>RCV</b>            Receive direction of transmission.</p> <p><b>AZ</b>            A-Z direction which is functionally the same as RCV.</p> <p>If no value is provided for this parameter, <i>NA</i> is assumed.</p>
<i>tmper</i>	<p>Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".</p> <p><b>15-MIN</b>        This requests PM data in 15-minute intervals (default).</p> <p><b>1-DAY</b>        This requests daily PM data.</p> <p>If no value is provided for this parameter, the network element responds using <b>15-MIN</b>.</p>
<i>mondatt</i>	<p>Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a <i>tmper</i> value of <b>15-MIN</b>, the maximum allowable range of valid dates supported by <i>mondatt</i> include the current and previous one day. For a <i>tmper</i> value of <b>1-DAY</b>, the maximum allowable range of valid dates supported by <i>mondatt</i> include the current and previous six days. This parameter, if specified, must have the values of <b>ALL</b> or in the format of <b>MM-DD</b> (month-day).</p> <p><b>MM-DD</b>        Month-day.</p> <p><b>ALL</b>            Current and previous day(s), as described above.</p> <p>If no value is entered for <i>mondatt</i>, the current date is assumed. If the <i>mondatt</i> specifies a date other than the current date or the previous day(s)'s date, as described above, the network element responds to the user using the current date as the <i>mondatt</i> value.</p>
<i>montm</i>	<p>Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in <i>tmper</i>. This parameter, if specified, must have the values of <b>ALL</b> or has the format <b>HOD-MOH</b> (hour of day-minute of hour), where <b>HOD</b> ranges from 00 to 23 and <b>MOH</b> ranges from 00 to 59.</p> <p><b>HOD-MOH</b>      Hour of day-minute of hour</p> <p><b>ALL</b>            All applicable beginning times for the given <i>mondatt</i> value.</p>

The table below specifies the performance-monitoring data output based on the input values of *tmper*, *mondatt*, and *montm* parameters. The term "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN or no value	ALL	any	15 min. data from the present time to the previous 8.25 hours
15-MIN or no value	current day or no value	ALL	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.
15-MIN or no value	previous day	ALL	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN or no value	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN or no value	current day, previous day, or no value	value of MONDAT and MONTM more than 8.25 hours before the current time, or other	return error response (invalid MONTM)
15-MIN or no value	other	value of MONDAT and MONTM within 8.25 hours of the current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN or no value	other	value of MONDAT and MONTM more than 8.25 hours before the current time, or other	return error response (invalid MONTM)
1-DAY	ALL	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	current 1-day data
other	any	any	return error response (invalid TMPER)

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-STS-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

## OUTPUT FORMAT

After receiving a valid command, the following output message is returned:

```
sid date time
M ctag COMPLD
  "aid,aidtype:montype,monval,[stat],[locn],tmper,mondatt,monthm"
    .      .      .      .      .
    .      .      .      .      .
    .      .      .      .      .
  "aid,aidtype:montype,monval,[stat],[locn],tmper,mondatt,monthm"
;
```

If there is no data to return for the given valid command, the following message is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

- aid* Access identifier. This is the address of the facility for which the PM data is being reported.
- aidtype* Access identifier type. This has one of the following values:
- OLINE** This reports performance-monitoring information at the optical lines for an OLS terminal.

	OCHAN	This reports performance-monitoring information at the optical channels for an OLS terminal.
	SUPR	This reports performance-monitoring information at the supervisory channel which is in OC3 format for an OLS terminal.
<i>montype</i>		Monitored parameter type.  Digital PM parameters include: CVL, ESL, SESL, and UASL; they are collected per 15 min. bin, and 1 day bin for each SUPR channel so that each has 2 values for each supervisory channel. Optical parameters include: SPR-SU and LBC-SU, and are collected on a per channel basis.
<i>monval</i>		Monitored value. This contains the measured value of the parameter specified in <i>montype</i> . For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active.
<i>stat</i>		Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:  NA           Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. <i>stat</i> shall be set to NA when data has not yet been collected.  OVFL        This indicates counts that overflow their registers.  TCA         Threshold Crossing Alert.  PRTL        Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.  If the status is not specified, the data is valid and below the threshold level for that parameter.  For <i>stat</i> , <i>OVFL</i> has a higher priority than <i>TCA</i> and <i>TCA</i> has a higher priority than <i>PRTL</i> .
<i>locn</i>		Location. The location field, if specified, must have the value (NEND).
<i>dirn</i>		Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.
<i>tmper</i>		Time period. This parameter has the value 15-MIN or 1-DAY.
<i>mondatt</i>		Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).
<i>montm</i>		Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

MOH is in quarter hour increments (that is, 00, 15, 30 and 45).

### **EXAMPLE INPUT/OUTPUT**

The command to retrieve performance monitoring data for all optical lines, optical and supervisory channels is:

```
rtrv-pm-all:LT-OLS:all:123456:,,,,,,,,;
```

```
IP 123456
```

```
<
```

```
LT-OLS 97-08-08 17:32:01
```

```
M 123456 COMPLD
```

```
"oline-1a,oline:LBC-P1,1.03,,,,15-MIN,08-08,17-00"  
"oline-1a,oline:LBC-P2,1.00,,,,15-MIN,08-08,17-00"  
"oline-1a,oline:LBFC-P1,1.01,,,,15-MIN,08-08,17-00"  
"oline-1a,oline:LBFC-P2,1.01,,,,15-MIN,08-08,17-00"  
"oline-1a,oline:TOPR-OL,80,,,,15-MIN,08-08,17-00"  
"oline-1b,oline:LBC-P1,1.03,,,,15-MIN,08-08,17-00"  
"oline-1b,oline:LBC-P2,1.00,,,,15-MIN,08-08,17-00"  
"oline-1b,oline:LBFC-P1,1.00,,,,15-MIN,08-08,17-00"  
"oline-1b,oline:LBFC-P2,1.00,,,,15-MIN,08-08,17-00"  
"oline-1b,oline:TOPR-OL,80,,,,15-MIN,08-08,17-00"  
"ochan-1a-1,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-2,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-3,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-4,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-5,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-6,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-7,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-8,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-9,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"  
"ochan-1a-10,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"  
"ochan-1a-11,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1a-12,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"  
"ochan-1a-13,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"  
"ochan-1a-14,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"  
"ochan-1a-15,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"  
"ochan-1a-16,ochan:SPR-C,80,,,,15-MIN,08-08,17-00"  
"ochan-1b-1,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-2,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-3,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-4,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-5,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-6,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-7,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-8,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-9,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"  
"ochan-1b-10,ochan:SPR-C,,NA,,15-MIN,08-08,17-00"
```

```
Screen continues on next page.
```

Screen continued from previous page.

```
"ochan-1b-11,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"  
"ochan-1b-12,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"  
"ochan-1b-13,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"  
"ochan-1b-14,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"  
"ochan-1b-15,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"  
"ochan-1b-16,ochan:SPR-C,,NA,,,15-MIN,08-08,17-00"  
"supr-1a,supr:LBC-SU,0.99,,,15-MIN,08-08,17-00"  
"supr-1a,supr:SPR-SU,0,,,15-MIN,08-08,17-00"
```

;

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

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

If the network element receives this command with an invalid *temper*, the following error response is returned:

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

If the network element receives this command with a *monlev* value of any value, 0-UP or 1-UP, the following error response is returned:

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

If the network element receives this command with an invalid *dirn* value, the following error response is returned:

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

If the network element receives this command with an invalid *montm* value, the following error response is returned:

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

If the network element receives this command with an invalid *mondatt* format, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-TH-ALL

RTRV-PM-xxx

REPT EVT

## RTRV-PM-OCHAN

**RTRV-PM-OCHAN:** Retrieve Performance\_Monitoring Optical\_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-PM-OCHAN:tid:aid:ctag:[montype],[monlev],[locn],  
[dirn],[tmper],[mondatt][,montm];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

This command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with one or more optical channels for an OLS terminal.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the facility for which the performance-monitoring data is requested.  Entity: Optical Channel  Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	This is the PM parameter type for which PM data is requested.  This parameter must be specified for one of the following values:  "SPR-C" (Optical Channel Signal Power), "ALL" (all applicable montype values).  If no value is provided for <i>montype</i> , the network element will respond with all performance monitoring data applicable to the <i>aid</i> .

*monlev* Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

**1-UP** A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

**0-UP** A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

**⇒ NOTE 1:**

All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

**⇒ NOTE 2:**

Several Optical PM montypes should be reported regardless of what the input *monlev* parameter value is. The *monlev* parameter (0-up and 1-up) does not apply to optical parameters LBC, LBC-P1, LBC-P2, LBFC-P1 and LBFC-P2 because they are represented as a fractional number ("real-valued") and is non-zero in the nominal case.

*locn* Location. This parameter indicates the location being monitored for performance. This parameter may have the following value, "NEND".

*dirn* Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ":

**NA** Not applicable (default).

**RCV** Receive direction of transmission.

**AZ** A-Z direction which is functionally the same as RCV.

If no value is provided for this parameter, *NA* is assumed.

*tmper* Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

**15-MIN** This requests PM data in 15-minute intervals (default).

**1-DAY** This requests daily PM data.

If no value is provided for this parameter, the network element responds using **15-MIN**.

*mondatt* Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of **15-MIN**, the maximum allowable range of valid dates supported by *mondatt* include the current and previous one day. For a *tmper* value of **1-DAY**, the maximum allowable range of valid dates supported by *mondatt* include

the current and previous six days. This parameter, if specified, must have the values of ALL or in the format of MM-DD (month-day).

**MM-DD** Month-day.

**ALL** Current and previous day(s), as described above.

If no value is entered for *mond**at*, the current date is assumed. If the *mond**at* specifies a date other than the current date or the previous day(s)'s date, as described above, the network element responds to the user using the current date as the *mond**at* value.

*montm* Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of ALL or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

**HOD-MOH** Hour of day-minute of hour

**ALL** All applicable beginning times for the given *mond**at* value.

The table below specifies the performance-monitoring data output based on the input values of *tmper*, *mond**at*, and *montm* parameters. The term "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

<b>TMPER</b>	<b>MONDAT</b>	<b>MONTM</b>	<b>Output PM Data</b>
15-MIN or no value	ALL	any	15 min. data from the present time to the previous 8.25 hours
15-MIN or no value	current day or no value	ALL	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.
15-MIN or no value	previous day	ALL	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN or no value	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN or no value	current day, previous day, or no value	value of MONDAT and MONTM more than 8.25 hours before the	return error response (invalid MONTM)

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
		current time, or other	
15-MIN or no value	other	value of MONDAT and MONTM within 8.25 hours of the current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN or no value	other	value of MONDAT and MONTM more than 8.25 hours before the current time, or other	return error response (invalid MONTM)
1-DAY	ALL	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	current 1-day data
other	any	any	return error response (invalid TMPER)

### CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

### OUTPUT FORMAT

After receiving a valid command, the following output message is returned:

```

sid date time
M ctag COMPLD
  "aid,aidtype:montype,monval,[stat],[locn],tmper,mondatt,montm"
    .      .      .      .      .
    .      .      .      .      .
    .      .      .      .      .
  "aid,aidtype:montype,monval,[stat],[locn],tmper,mondatt,montm"
;

```

Applicable output lines are ordered as follows:

1. By *aid* in order corresponding to the shelf architecture.
2. By requested time intervals, starting with the current time interval.
3. By applicable PM parameters per *aid*.

If there is no data to return for the given valid command, the following message is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the facility for which the PM data is being reported.
<i>aidtype</i>	Access identifier type.  OCHAN This reports performance-monitoring information at the optical channels for an OLS terminal.
<i>montype</i>	Monitored parameter type.  This parameter must be specified for one of the following values: "SPR-C" (Optical Channel Signal Power), "ALL" (all applicable montype values).  Digital PM parameters include: CVL, ESL, SESL, and UASL; they are collected per 15 min. bin, and 1 day bin for each SUPR channel so that each has 2 values for each supervisory channel. Optical parameters include: SPR-SU and LBC-SU, and are collected on a per channel basis.
<i>monval</i>	Monitored value. This contains the measured value of the parameter specified in <i>montype</i> . For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active. The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.
<i>stat</i>	Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:  NA Data is not available. This includes counts not available because of trouble conditions that cause performance-

monitoring to be suspended. *stat* shall be set to NA when data has not yet been collected.

OVFL This indicates counts that overflow their registers.

TCA Threshold Crossing Alert.

PRTL Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.

If the status is not specified, the data is valid and below the threshold level for that parameter.

For *stat*, *OVFL* has a higher priority than *TCA* and *TCA* has a higher priority than *PRTL*.

*locn* Location. The location field, if specified, must have the value (NEND).

*dirn* Direction. The direction field will always be no value.

*tmper* Time period. This parameter has the value 15-MIN or 1-DAY.

*mondat* Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).

*montm* Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

## EXAMPLE INPUT/OUTPUT

The command to retrieve the optical channel signal power (SPR-C) performance monitoring data for ochan-1a-4 for a Single OA is:

```
rtrv-pm-ochan:LT-OLS:ochan-1a-4:123456::all,,,,,;

IP 123456
<

LT-OLS 97-07-10 13:02:07
M 123456 COMPLD
"ochan-1a-4,ochan:SPR-C,,,,,15-MIN,07-10,15-00"
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

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

If the network element receives this command with an invalid *tmper*, the following error response is returned:

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

If the network element receives this command with a *monlev* value of any value, 0-~~UP~~ or 1-~~UP~~, the following error response is returned:

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

If the network element receives this command with a invalid *dirn* value, the following error response is returned:

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

If the network element receives this command with an invalid *montm* value, the following error response is returned:

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

If the network element receives this command with an invalid *mondatt* format, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-PM-OLINE

**RTRV-PM-OLINE:** Retrieve Performance\_Monitoring Optical\_Line

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-PM-OLINE:tid:aid:ctag::[montype],[monlev],[locn],  
[dirn],[tmper],[mondatt][,montm];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

This command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with one or more optical lines for an OLS terminal.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the facility for which the performance-monitoring data is requested.  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	This is the PM parameter type for which PM data is requested.  This parameter must be specified for one of the following values: <ul style="list-style-type: none"><li>• LBC-P1 (Laser Bias Current for Pump 1)</li><li>• LBC-P2 (Laser Bias Current for Pump 2)</li><li>• LBFC-P1 (Laser Backface Current for Pump 1)</li><li>• LBFC-P2 (Laser Backface Current for Pump 2)</li></ul>

- TOPR-OL (Total Received Power - Optical Line)
- ALL (all applicable montype values)

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

*monlev* Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

**1-UP** A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

**0-UP** A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

### ⇒ NOTE 1:

All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

### ⇒ NOTE 2:

Several Optical PM montypes should be reported regardless of what the input *monlev* parameter value is. The *monlev* parameter (0-up and 1-up) does not apply to optical parameters LBC, LBC-P1, LBC-P2, LBFC-P1 and LBFC-P2 because they are represented as a fractional number ("real-valued") and is non-zero in the nominal case.

*locn* Location. This parameter indicates the location being monitored for performance. This parameter may have the following value, "NEND".

*dirn* Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ":

**NA** Not applicable (default).

**RCV** Receive direction of transmission.

**AZ** A-Z direction which is functionally the same as RCV.

If no value is provided for this parameter, *NA* is assumed.

*timper* Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

**15-MIN** This requests PM data in 15-minute intervals (default).

**1-DAY** This requests daily PM data.

If no value is provided for this parameter, the network element responds using **15-MIN**.

*mond*at Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of 15-MIN, the maximum allowable range of valid dates supported by *mond*at include the current and previous one day. For a *tmper* value of 1-DAY, the maximum allowable range of valid dates supported by *mond*at include the current and previous six days. This parameter, if specified, must have the values of ALL or in the format of MM-DD (month-day).

**MM-DD** Month-day.

**ALL** Current and previous day(s), as described above.

If no value is entered for *mond*at, the current date is assumed. If the *mond*at specifies a date other than the current date or the previous day(s)'s date, as described above, the network element responds to the user using the current date as the *mond*at value.

*mont*m Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of ALL or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

**HOD-MOH** Hour of day-minute of hour

**ALL** All applicable beginning times for the given *mond*at value.

The table below specifies the performance-monitoring data output based on the input values of *tmper*, *mond*at, and *mont*m parameters. The term "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

<b>TMPER</b>	<b>MONDAT</b>	<b>MONTM</b>	<b>Output PM Data</b>
15-MIN or no value	<b>ALL</b>	any	15 min. data from the present time to the previous 8.25 hours
15-MIN or no value	current day or no value	<b>ALL</b>	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.
15-MIN or no value	previous day	<b>ALL</b>	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).
15-MIN or no value	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

<b>TMPER</b>	<b>MONDAT</b>	<b>MONTM</b>	<b>Output PM Data</b>
15-MIN or no value	current day, previous day, or no value	value of MONDAT and MONTM more than 8.25 hours before the current time, or other	return error response (invalid MONTM)
15-MIN or no value	other	value of MONDAT and MONTM within 8.25 hours of the current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN or no value	other	value of MONDAT and MONTM more than 8.25 hours before the current time, or other	return error response (invalid MONTM)
1-DAY	ALL	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	current 1-day data
other	any	any	return error response (invalid TMPER)

### CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

### OUTPUT FORMAT

After receiving a valid command, the following output message is returned:

```

sid date time
M ctag COMPLD
"aid,aidtype:montype,monval,[stat],[locn],tmper,mondat,montm"
.      .      .      .      .
.      .      .      .      .
.      .      .      .      .
"aid,aidtype:montype,monval,[stat],[locn],tmper,mondat,montm"
;

```

Applicable output lines are ordered as follows:

1. By *aid* in order corresponding to the shelf architecture.
2. By requested time intervals, starting with the current time interval.
3. By applicable PM parameters per *aid*.

If there is no data to return for the given valid command, the following message is returned:

```

sid date time
M ctag COMPLD
;

```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

*aid* Access identifier. This is the address of the facility for which the PM data is being reported.

*aidtype* Access identifier type.

OLINE This reports performance-monitoring information at the optical lines for an OLS terminal.

*montype* Monitored parameter type.

This parameter must be specified for one of the following values:

- LBC-P1 (Laser Bias Current for Pump 1)
- LBC-P2 (Laser Bias Current for Pump 2)
- LBFC-P1 (Laser Backface Current for Pump 1)
- LBFC-P2 (Laser Backface Current for Pump 2)

- TOPR-OL (Total Received Power - Optical Line)
- ALL (all applicable montype values)

Digital PM parameters include: CVL, ESL, SESL, and UASL; they are collected per 15 min. bin, and 1 day bin for each SUPR channel so that each has 2 values for each supervisory channel. Optical parameters include: SPR-SU and LBC-SU, and are collected on a per channel basis.

<i>monval</i>	Monitored value. This contains the measured value of the parameter specified in <i>montype</i> . For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active. The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.
<i>stat</i>	Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values:  NA           Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. <i>stat</i> shall be set to NA when data has not yet been collected.  OVFL        This indicates counts that overflow their registers.  TCA         Threshold Crossing Alert.  PRTL        Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.  If the status is not specified, the data is valid and below the threshold level for that parameter.  For <i>stat</i> , <i>OVFL</i> has a higher priority than <i>TCA</i> and <i>TCA</i> has a higher priority than <i>PRTL</i> .
<i>locn</i>	Location. The location field, if specified, must have the value (NEND).
<i>dirn</i>	Direction. The direction field will always be no value.
<i>tmper</i>	Time period. This parameter has the value 15-MIN or 1-DAY.
<i>mondatt</i>	Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).
<i>montm</i>	Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).

## EXAMPLE INPUT/OUTPUT

In the following example, the **RTRV-PM-OLINE** command returns Total optical power (TOPR-L) performance monitoring data for optical lines 1a, 1b, 2a, 2b at 15 minute intervals on Oct.26, starting at 17:00.

```
rtrv-pm-oline:LT-OLS:oline-all:314152::TOPR-OL,,,,15-MIN,10-26;  
  
IP 314152  
>  
  
LT-PF-2000 91-10-26 17:12:31  
M 314152 COMPLD  
"oline-1a,OLINE:TOPR-OL,70,,,,15-MIN,10-26,17-00"  
"oline-1b,OLINE:TOPR-OL,70,,,,15-MIN,10-26,17-00"  
"oline-2a,OLINE:TOPR-OL,80,TCA,,,,15-MIN,10-26,17-00"  
"oline-2b,OLINE:TOPR-OL,60,,,,15-MIN,10-26,17-00"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

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

If the network element receives this command with an invalid *tmper*, the following error response is returned:

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

If the network element receives this command with a *monlev* value of any value, **0-UP** or **1-UP**, the following error response is returned:

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

If the network element receives this command with a invalid *dirn* value, the following error response is returned:

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

If the network element receives this command with an invalid *montm* value, the following error response is returned:

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

If the network element receives this command with an invalid *mondatt* format, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-PM-STIME

**RTRV-PM-STIME** Retrieve Performance\_Monitoring Start\_Time

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**RTRV-PM-STIME**:*tid*::*ctag*;

## DESCRIPTION

The **RTRV-PM-STIME** command can be initiated by all users to retrieve the start time for measuring the day bins.

## INPUT PARAMETERS

*tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

*ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

When reporting the provisioning information, the following output message is returned:

```
sid date time
M ctag COMPLD
":start_hour"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

*start\_hour*                      *START\_HOUR* is a position defined parameter to report the start hour for day bin measurements. It is reported in HH-00 format.

## EXAMPLE OUTPUT

The following example shows a command *tid* for a network element.

```
rtrv-pm-stime:LT-PF-2000::CTAG;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M CTAG COMPLD  
":23-00"  
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## RELATED TL1 COMMANDS/MESSAGES

**SET-PM-STIME**

## RTRV-PM-SUPR

**RTRV-PM-SUPR:** Retrieve Performance\_Monitoring Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available beginning in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-PM-SUPR:tid:aid:ctag::[montype],[monlev],[locn],  
[dirn],[tmper],[mondatt][,montm];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

This command is initiated by an OS or OS user to request the network element to send the current and/or historical performance-monitoring (PM) data associated with the supervisory channel, which is in OC3 format, for an OLS terminal.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the facility for which the performance-monitoring data is requested.  Entity: Supervisory Channel (End Terminals) Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)  Entity: Supervisory Channel [Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	This is the PM parameter type for which PM data is requested.  This parameter must be specified for one of the following values: <ul style="list-style-type: none"><li>• CVL (Coding violation count - Line Near End)</li><li>• ESL (Errored second count - Line Near End)</li></ul>

- SESL (Severely errored second count - Line Near End)
- UASL (Unavailable second count - Line Near End)
- SPR-SU (Signal power - Supervisory)
- LBC-SU (Laser Bias Current - Supervisory)
- ALL (all applicable montype values)

If no value is provided for *montype*, the network element will respond with all performance monitoring data applicable to the *aid*.

*monlev*

Monitored parameter level. This provides the level and direction which are used to discriminate which performance monitoring data is being requested. This parameter, if specified, must have one of the following values: "1-UP" or "0-UP".

**1-UP** A **1-UP** *monlev* value means that the network element reports only positive, non-zero data.

**0-UP** A **0-UP** *monlev* value means that the network element reports data on all requested PM parameters without regard for their value.

**⇒ NOTE 1:**

All the network element PM data can have only non-negative values. If no value is provided for this parameter, **1-UP** is assumed.

**⇒ NOTE 2:**

Several Optical PM montypes should be reported regardless of what the input *monlev* parameter value is. The *monlev* parameter (0-up and 1-up) does not apply to optical parameters LBC, LBC-P1, LBC-P2, LBFC-P1 and LBFC-P2 because they are represented as a fractional number ("real-valued") and is non-zero in the nominal case.

*locn*

Location. This parameter indicates the location being monitored for performance. This parameter may have the following value, "NEND".

*dirn*

Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ":

**NA** Not applicable (default).

**RCV** Receive direction of transmission.

**AZ** A-Z direction which is functionally the same as RCV.

If no value is provided for this parameter, *NA* is assumed.

*tmper*

Time period. This parameter requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

**15-MIN** This requests PM data in 15-minute intervals (default).

**1-DAY** This requests daily PM data.

If no value is provided for this parameter, the network element responds using **15-MIN**.

*mond***at** Monitored date. This requests the beginning date of the interval for which the PM data is to be reported. For a *tmper* value of **15-MIN**, the maximum allowable range of valid dates supported by *mond***at** include the current and previous one day. For a *tmper* value of **1-DAY**, the maximum allowable range of valid dates supported by *mond***at** include the current and previous six days. This parameter, if specified, must have the values of **ALL** or in the format of MM-DD (month-day).

**MM-DD** Month-day.

**ALL** Current and previous day(s), as described above.

If no value is entered for *mond***at**, the current date is assumed. If the *mond***at** specifies a date other than the current date or the previous day(s)'s date, as described above, the network element responds to the user using the current date as the *mond***at** value.

*mont***m** Monitored time. This specifies the beginning time of day of the requested performance-monitoring period specified in *tmper*. This parameter, if specified, must have the values of **ALL** or has the format HOD-MOH (hour of day-minute of hour), where HOD ranges from 00 to 23 and MOH ranges from 00 to 59.

**HOD-MOH** Hour of day-minute of hour

**ALL** All applicable beginning times for the given *mond***at** value.

The table below specifies the performance-monitoring data output based on the input values of *tmper*, *mond***at**, and *mont***m** parameters. The term "other" is used to refer to any input value that is not covered by another entry for the subject parameter. The term "any" is used to refer to any input value, including "other" and no value, for the subject parameter.

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

<b>TMPER</b>	<b>MONDAT</b>	<b>MONTM</b>	<b>Output PM Data</b>
<b>15-MIN</b> or no value	<b>ALL</b>	any	15 min. data from the present time to the previous 8.25 hours
<b>15-MIN</b> or no value	current day or no value	<b>ALL</b>	15 min. data from the present time to the previous midnight or 8.25 earlier than the present, whichever is more recent.
<b>15-MIN</b> or no value	previous day	<b>ALL</b>	15 min. data from the previous midnight to 8 hours earlier than the present time. If the current time is later than 8:15 A.M., return an error response (invalid MONTM).

RTRV-PM Output Data Relating to MONDAT, TMPER, and MONTM Input Parameters

TMPER	MONDAT	MONTM	Output PM Data
15-MIN or no value	previous day, current day, or no value	value of MONDAT and MONTM within 8.25 hours of current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN or no value	current day, previous day, or no value	value of MONDAT and MONTM more than 8.25 hours before the current time, or other	return error response (invalid MONTM)
15-MIN or no value	other	value of MONDAT and MONTM within 8.25 hours of the current time	single 15 min. interval of data beginning at MONDAT and MONTM
15-MIN or no value	other	value of MONDAT and MONTM more than 8.25 hours before the current time, or other	return error response (invalid MONTM)
1-DAY	ALL	any	current and previous 1-day data
1-DAY	current day or no value	any	current 1-day data
1-DAY	any one of the previous six days	any	appropriate previous 1-day data
1-DAY	other	any	current 1-day data
other	any	any	return error response (invalid TMPER)

### CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

### OUTPUT FORMAT

After receiving a valid command, the following output message is returned:

```

sid date time
M ctag COMPLD
"aid,aidtype:montype,monval,[stat],[locn],tmper,mondat,montm"
.
.
.
"aid,aidtype:montype,monval,[stat],[locn],tmper,mondat,montm"
;

```

Applicable output lines are ordered as follows:

1. By *aid* in order corresponding to the shelf architecture.
2. By requested time intervals, starting with the current time interval.
3. By applicable PM parameters per *aid*.

If there is no data to return for the given valid command, the following message is returned:

```

sid date time
M ctag COMPLD
;

```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access identifier. This is the address of the facility for which the PM data is being reported.
<i>aidtype</i>	Access identifier type.  SUPR This reports performance-monitoring information at the supervisory channel, which is in OC3 format, for an OLS terminal.
<i>montype</i>	Monitored parameter type.  This parameter must be specified for one of the following values: <ul style="list-style-type: none"> <li>• CVL (Coding violation count - Line Near End)</li> <li>• ESL (Errored second count - Line Near End)</li> <li>• SESL (Severely errored second count - Line Near End)</li> </ul>

- UASL (Unavailable second count - Line Near End)
- SPR-SU (Signal power - Supervisory)
- LBC-SU (Laser Bias Current - Supervisory)
- ALL (all applicable montype values)

<i>monval</i>	Monitored value. This contains the measured value of the parameter specified in <i>montype</i> . For OLS PM parameters which do not accumulate over time, the PM monitored value shall be frozen when the threshold is reached (and TCA reported) until the current 15-minute time interval expires and the next bin becomes active.								
<i>stat</i>	Status indicator. This indicates the validity of the PM data or if threshold has been exceeded by the PM data. This parameter, if specified, must have one of the following values: <table> <tr> <td>NA</td> <td>Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. <i>stat</i> shall be set to NA when data has not yet been collected.</td> </tr> <tr> <td>OVFL</td> <td>This indicates counts that overflow their registers.</td> </tr> <tr> <td>TCA</td> <td>Threshold Crossing Alert.</td> </tr> <tr> <td>PRTL</td> <td>Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.</td> </tr> </table> <p>If the status is not specified, the data is valid and below the threshold level for that parameter.</p> <p>For <i>stat</i>, <i>OVFL</i> has a higher priority than <i>TCA</i> and <i>TCA</i> has a higher priority than <i>PRTL</i>.</p>	NA	Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. <i>stat</i> shall be set to NA when data has not yet been collected.	OVFL	This indicates counts that overflow their registers.	TCA	Threshold Crossing Alert.	PRTL	Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.
NA	Data is not available. This includes counts not available because of trouble conditions that cause performance-monitoring to be suspended. <i>stat</i> shall be set to NA when data has not yet been collected.								
OVFL	This indicates counts that overflow their registers.								
TCA	Threshold Crossing Alert.								
PRTL	Data is accumulated over a complete interval but is corrupted or data is incomplete because it is not accumulated over a complete portion of the requested time period.								
<i>locn</i>	Location. The location field, if specified, must have the value (NEND).								
<i>dirn</i>	Direction. The direction field will always be no value.								
<i>tmper</i>	Time period. This parameter has the value 15-MIN or 1-DAY.								
<i>mondatt</i>	Monitored date. This is the beginning date of the interval for which PM data is reported. This parameter has the format MM-DD (month-day).								
<i>montm</i>	Monitored time. This is the beginning time of the interval for which the PM data is reported. This parameter has the format HOD-MOH (hour of day-minute of hour).								

### EXAMPLE INPUT/OUTPUT

The command to retrieve performance monitoring data for *supr-1a* is:

```
rtrv-pm-supr:LT-OLS:supr-1a:123456::,,,,,;

IP 123456
<

LT-OLS 97-08-29 15:03:15
M 123456 COMPLD
"supr-1a,supr:LBC-SU,1.01,,,,15-MIN,01-02,08-00"
"supr-1a,supr:SPR-SU,0,,,,15-MIN,01-02,08-00"
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If the network element receives this command without an *aid* value or with an *aid* value that is invalid for the *modifier* provided, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

If the network element receives this command with a *montype* value that is not supported by the network element, the following error response is returned:

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

If the network element receives this command with an invalid *tmper*, the following error response is returned:

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

If the network element receives this command with a *monlev* value of any value, 0-UP or 1-UP, the following error response is returned:

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

If the network element receives this command with an invalid *dirn* value, the following error response is returned:

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

If the network element receives this command with an invalid *montm* value, the following error response is returned:

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

If the network element receives this command with an invalid *mondatt* format, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## RTRV-RELSPR

**RTRV-RELSPR:** Retrieve Relative\_Signal\_Power

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**RTRV-RELSPR:***tid:aid:ctag;*

## DESCRIPTION

The **RTRV-RELSPR** command can be initiated by users to report instantaneous signal power of each channel in an optical line relative to the strongest signal in a scale of 0 to 100. The command can be applied at any site, but the report is meaningful only for the end terminals with OMU.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the optical line. The <i>aid</i> value may also be <b>a11</b> (default value).  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

The following output message is returned if a valid input command is issued:

```
sid date time
M ctag COMPLD
  "aid:OPDDB"
  "aid:OPDDB"
;
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

<i>aid</i>	Access Identifier. This is the address of an optical line.
<i>OPDDB</i>	The <i>OPDDB</i> is a position defined block to report various attributes. The format will be <i>value1:value2:...</i> . All applicable attributes are reported.
<i>stime</i>	Start Time. This parameter indicates the time when the relative signal power per channel is measured. It is reported as hh-mm.
<i>relspr_c</i>	Relative Signal Power per Channel. This parameter indicates the measured signal power of a channel relative to the strongest signal. It is reported in a scale of 0 to 100. If <i>relspr_c</i> data are requested on optical channels and the corresponding optical line is IS but the OA circuit pack is not inserted (or removed and no Update command issued), then the "-" will be shown in the data fields. If <i>relspr_c</i> data are requested on optical lines that are not equipped, then the "-" will be shown in the data fields. The optical line, and its constituent optical channel(s), DEMUXed at a single OA OLS End Terminal is not directly monitored because there is no OA directly preceding the ODU.

## EXAMPLE OUTPUT

The following example shows the results of a **RTRV-RELSPR** command:

```
rtrv-relspr:LT-OLS:all:123456;
```

```
IP 123456
```

```
<
```

```
LT-OLS 97-09-16 15:35:00
```

```
M 123456 COMPLD
```

```
"ochan-1a-1:08-29:-"
```

```
"ochan-1a-2:08-29:-"
```

```
"ochan-1a-3:08-29:-"
```

```
"ochan-1a-4:08-29:-"
```

```
"ochan-1a-5:08-29:-"
```

```
"ochan-1a-6:08-29:-"
```

```
"ochan-1a-7:08-29:-"
```

```
"ochan-1a-8:08-29:-"
```

```
"ochan-1a-9:08-29:-"
```

```
"ochan-1a-10:08-29:-"
```

```
"ochan-1a-11:08-29:-"
```

```
"ochan-1a-12:08-29:-"
```

```
"ochan-1a-13:08-29:-"
```

```
"ochan-1a-14:08-29:-"
```

```
"ochan-1a-15:08-29:-"
```

```
"ochan-1a-16:08-29:-"
```

```
"ochan-1b-1:08-29:0"
```

```
"ochan-1b-2:08-29:0"
```

```
"ochan-1b-3:08-29:0"
```

```
"ochan-1b-4:08-29:100"
```

```
"ochan-1b-5:08-29:0"
```

```
"ochan-1b-6:08-29:0"
```

```
"ochan-1b-7:08-29:0"
```

```
"ochan-1b-8:08-29:0"
```

```
"ochan-1b-9:08-29:0"
```

```
"ochan-1b-10:08-29:0"
```

```
"ochan-1b-11:08-29:0"
```

```
"ochan-1b-12:08-29:0"
```

```
"ochan-1b-13:08-29:0"
```

```
"ochan-1b-14:08-29:0"
```

```
"ochan-1b-15:08-29:0"
```

```
"ochan-1b-16:08-29:0"
```

```
"ochan-2a-1:08-29:-"
```

```
"ochan-2a-2:08-29:-"
```

```
"ochan-2a-3:08-29:-"
```

```
"ochan-2a-4:08-29:-"
```

```
Screen continues on next page.
```

Screen continued from previous page.

"ochan-2a-5:08-29:-"  
"ochan-2a-6:08-29:-"  
"ochan-2a-7:08-29:-"  
"ochan-2a-8:08-29:-"  
"ochan-2a-9:08-29:-"  
"ochan-2a-10:08-29:-"  
"ochan-2a-11:08-29:-"  
"ochan-2a-12:08-29:-"  
"ochan-2a-13:08-29:-"  
"ochan-2a-14:08-29:-"  
"ochan-2a-15:08-29:-"  
"ochan-2a-16:08-29:-"  
"ochan-2b-1:08-29:0"  
"ochan-2b-2:08-29:0"  
"ochan-2b-3:08-29:0"  
"ochan-2b-4:08-29:100"  
"ochan-2b-5:08-29:0"  
"ochan-2b-6:08-29:0"  
"ochan-2b-7:08-29:0"  
"ochan-2b-8:08-29:0"  
"ochan-2b-9:08-29:0"  
"ochan-2b-10:08-29:0"  
"ochan-2b-11:08-29:0"  
"ochan-2b-12:08-29:0"  
"ochan-2b-13:08-29:0"  
"ochan-2b-14:08-29:0"  
"ochan-2b-15:08-29:0"  
"ochan-2b-16:08-29:0"  
"ochan-3a-1:08-29:-"  
"ochan-3a-2:08-29:-"  
"ochan-3a-3:08-29:-"  
"ochan-3a-4:08-29:-"  
"ochan-3a-5:08-29:-"  
"ochan-3a-6:08-29:-"  
"ochan-3a-7:08-29:-"  
"ochan-3a-8:08-29:-"  
"ochan-3a-9:08-29:-"  
"ochan-3a-10:08-29:-"  
"ochan-3a-11:08-29:-"  
"ochan-3a-12:08-29:-"  
"ochan-3a-13:08-29:-"  
"ochan-3a-14:08-29:-"  
"ochan-3a-15:08-29:-"  
"ochan-3a-16:08-29:-"

Screen continues on next page.

Screen continued from previous page.

"ochan-3b-1:08-29:-"  
"ochan-3b-2:08-29:-"  
"ochan-3b-3:08-29:-"  
"ochan-3b-4:08-29:-"  
"ochan-3b-5:08-29:-"  
"ochan-3b-6:08-29:-"  
"ochan-3b-7:08-29:-"  
"ochan-3b-8:08-29:-"  
"ochan-3b-9:08-29:-"  
"ochan-3b-10:08-29:-"  
"ochan-3b-11:08-29:-"  
"ochan-3b-12:08-29:-"  
"ochan-3b-13:08-29:-"  
"ochan-3b-14:08-29:-"  
"ochan-3b-15:08-29:-"  
"ochan-3b-16:08-29:-"  
"ochan-4a-1:08-29:-"  
"ochan-4a-2:08-29:-"  
"ochan-4a-3:08-29:-"  
"ochan-4a-4:08-29:-"  
"ochan-4a-5:08-29:-"  
"ochan-4a-6:08-29:-"  
"ochan-4a-7:08-29:-"  
"ochan-4a-8:08-29:-"  
"ochan-4a-9:08-29:-"  
"ochan-4a-10:08-29:-"  
"ochan-4a-11:08-29:-"  
"ochan-4a-12:08-29:-"  
"ochan-4a-13:08-29:-"  
"ochan-4a-14:08-29:-"  
"ochan-4a-15:08-29:-"  
"ochan-4a-16:08-29:-"  
"ochan-4b-1:08-29:-"  
"ochan-4b-2:08-29:-"  
"ochan-4b-3:08-29:-"  
"ochan-4b-4:08-29:-"  
"ochan-4b-5:08-29:-"  
"ochan-4b-6:08-29:-"  
"ochan-4b-7:08-29:-"  
"ochan-4b-8:08-29:-"  
"ochan-4b-9:08-29:-"  
"ochan-4b-10:08-29:-"  
"ochan-4b-11:08-29:-"  
"ochan-4b-12:08-29:-"

Screen continues on next page.

Screen continued from previous page.

```
"ochan-4b-13:08-29:-"  
"ochan-4b-14:08-29:-"  
"ochan-4b-15:08-29:-"  
"ochan-4b-16:08-29:-"
```

```
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If an **RTRV-RELSR** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-PM-OCHAN**

## RTRV-STATE

**RTRV-STATE:** Retrieve State

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**RTRV-STATE:** *tid*[:*aid*]:*ctag*;

## DESCRIPTION

The **RTRV-STATE** command can be initiated by users to retrieve slot, port, tributary, and line protection switching state and also switch priority information for the network element.

## INPUT PARAMETERS

- tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:
- [A-Z][a-z][0-9].+-%#
- aid* Access identifier. This is the address of the slot, port, tributary, or line for which this command is intended. The *aid* value may also be **all** or unspecified. If an *aid* is not sent to the network element, the network element responds as if the *aid* was all.
- Entity: All  
Legal Values: (ALL)
- Entity: CMS Port [End Terminals]  
Legal Values: (CMS)-(ALL,1A,2A,3A,4A)
- Entity: CMS Port [Repeaters]  
Legal Values: (CMS)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
- Entity: Optical Line  
Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
- Entity: Optical Channel  
Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
- Entity: Supervisory Channel (End Terminals)  
Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)
- Entity: Supervisory Channel [Repeaters]  
Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
- ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of

decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

```
sid date time
M ctag COMPLD
  "aid,[cptype]:[port_state_in],[port_state_out],[sw_state],
[actswprty],[queswprty]"
      .           .           .           .           .
      .           .           .           .           .
  "aid,[cptype]:[port_state_in],[port_state_out],[sw_state],
[actswprty],[queswprty]"
;
```

The output report is sorted as follows:

1. CMS port data
2. Optical line data
3. Supervisory channel data
4. Optical channel data

Within each group, the entries are sorted by *aid* values.

If the user selects **ochan-a11**, where applicable, the output must include the following:

```
ochan-1a-1,
ochan-1b-1,
.
.
.
ochan-4b-16.
```

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**. Additional parameters that specifically apply to this command response are defined below.

*aid* Access identifier. This is the address of the slot, port, tributary, or line for which state information is given.

*cptype* Circuit Pack Type. This is the mnemonic name of the circuit pack. For example, tg3 is the mnemonic name of the timing generator circuit pack. 'RDNA' is a valid value, and indicates "Requested data not available". If the requested 'cptype' data for the addressed entity is corrupted, this value is reported. A null value implies that the slot is not equipped or the parameter does not apply.

*port\_state\_in* Port State In. This is the port state in the "in" direction. Valid values are IS, OOS-MA-AS, or OOS corresponding to the "IS", "AUTO", or "NMON" states. 'RDNA' is a valid value, and indicates "Requested data not available". If the requested 'port\_state\_in' data for the addressed entity is corrupted, this value is reported.

This parameter is blank if it does not apply for a given *aid*. In a single OA configuration, optical channels *port\_state\_in* parameter at the demux end is reported as "RDNA". However, if the optical channel port is provisioned as "OOS", *port\_state\_in* parameter is reported as "OOS".

## EXAMPLE INPUT/OUTPUT

The following examples show a **RTRV-STATE** command with the system configured as End Terminal with only the optical lines 1a, 1b, 2a, and 2b equipped and other optical lines are not equipped.

Also the terminal is in single OA configuration.

RTRV-STATE:LT-PF-2000:ALL:CTAG;

IP 123456

<

LT-PF-2000 93-10-26 16:42:11

M 123456 COMPLD

"cms-1a,:IS,,,"

"cms-2a,:IS,,,"

"cms-3a,:,,,,"

"cms-4a,:,,,,"

"oline-1a,:IS,,,"

"oline-1b,:IS,,,"

"oline-2a,:IS,,,"

"oline-2b,:IS,,,"

"oline-3a,:,,,,"

"oline-3b,:,,,,"

"oline-4a,:,,,,"

"oline-4b,:,,,,"

"supr-1a,:IS,,,"

"supr-1b,:IS,,,"

"supr-2a,:IS,,,"

"supr-2b,:IS,,,"

"supr-3a,:,,,,"

"supr-3b,:,,,,"

"supr-4a,:,,,,"

"supr-4b,:,,,,"

"ochan-1a-1,:RDNA,,,"

"ochan-1a-2,:RDNA,,,"

"ochan-1a-3,:RDNA,,,"

"ochan-1a-4,:RDNA,,,"

"ochan-1a-5,:RDNA,,,"

"ochan-1a-6,:RDNA,,,"

"ochan-1a-7,:RDNA,,,"

"ochan-1a-8,:RDNA,,,"

"ochan-1a-9,:RDNA,,,"

"ochan-1a-10,:RDNA,,,"

"ochan-1a-11,:RDNA,,,"

"ochan-1a-12,:RDNA,,,"

"ochan-1a-13,:RDNA,,,"

"ochan-1a-14,:RDNA,,,"

"ochan-1a-15,:RDNA,,,"

"ochan-1a-16,:RDNA,,,"

Screen continues on next page.

Screen continued from previous page.

```
"ochan-1b-1, :IS, , , , "  
"ochan-1b-2, :IS, , , , "  
"ochan-1b-3, :IS, , , , "  
"ochan-1b-4, :IS, , , , "  
"ochan-1b-5, :IS, , , , "  
"ochan-1b-6, :IS, , , , "  
"ochan-1b-7, :IS, , , , "  
"ochan-1b-8, :IS, , , , "  
"ochan-1b-9, :IS, , , , "  
"ochan-1b-10, :IS, , , , "  
"ochan-1b-11, :IS, , , , "  
"ochan-1b-12, :IS, , , , "  
"ochan-1b-13, :IS, , , , "  
"ochan-1b-14, :IS, , , , "  
"ochan-1b-15, :IS, , , , "  
"ochan-1b-16, :IS, , , , "  
"ochan-2a-1, :RDNA, , , , "  
"ochan-2a-2, :RDNA, , , , "  
"ochan-2a-3, :RDNA, , , , "  
"ochan-2a-4, :RDNA, , , , "  
"ochan-2a-5, :RDNA, , , , "  
"ochan-2a-6, :RDNA, , , , "  
"ochan-2a-7, :OOS, , , , "  
"ochan-2a-8, :RDNA, , , , "  
"ochan-2a-9, :RDNA, , , , "  
"ochan-2a-10, :RDNA, , , , "  
"ochan-2a-11, :RDNA, , , , "  
"ochan-2a-12, :RDNA, , , , "  
"ochan-2a-13, :RDNA, , , , "  
"ochan-2a-14, :RDNA, , , , "  
"ochan-2a-15, :OOS, , , , "  
"ochan-2a-16, :RDNA, , , , "  
"ochan-2b-1, :IS, , , , "  
"ochan-2b-2, :IS, , , , "  
"ochan-2b-3, :IS, , , , "  
"ochan-2b-4, :IS, , , , "  
"ochan-2b-5, :IS, , , , "  
"ochan-2b-6, :IS, , , , "  
"ochan-2b-7, :OOS, , , , "  
"ochan-2b-8, :IS, , , , "  
"ochan-2b-9, :IS, , , , "  
"ochan-2b-10, :IS, , , , "  
"ochan-2b-11, :IS, , , , "  
"ochan-2b-12, :IS, , , , "
```

Screen continues on next page.

Screen continued from previous page.

```
"ochan-2b-13,:IS,,,"  
"ochan-2b-14,:IS,,,"  
"ochan-2b-15,:OOS,,,"  
"ochan-2b-16,:IS,,,"  
"ochan-3a-1,:,,,"  
"ochan-3a-2,:,,,"  
"ochan-3a-3,:,,,"  
"ochan-3a-4,:,,,"  
"ochan-3a-5,:,,,"  
"ochan-3a-6,:,,,"  
"ochan-3a-7,:,,,"  
"ochan-3a-8,:,,,"  
"ochan-3a-9,:,,,"  
"ochan-3a-10,:,,,"  
"ochan-3a-11,:,,,"  
"ochan-3a-12,:,,,"  
"ochan-3a-13,:,,,"  
"ochan-3a-14,:,,,"  
"ochan-3a-15,:,,,"  
"ochan-3a-16,:,,,"  
"ochan-3b-1,:,,,"  
"ochan-3b-2,:,,,"  
"ochan-3b-3,:,,,"  
"ochan-3b-4,:,,,"  
"ochan-3b-5,:,,,"  
"ochan-3b-6,:,,,"  
"ochan-3b-7,:,,,"  
"ochan-3b-8,:,,,"  
"ochan-3b-9,:,,,"  
"ochan-3b-10,:,,,"  
"ochan-3b-11,:,,,"  
"ochan-3b-12,:,,,"  
"ochan-3b-13,:,,,"  
"ochan-3b-14,:,,,"  
"ochan-3b-15,:,,,"  
"ochan-3b-16,:,,,"  
"ochan-4a-1,:,,,"  
"ochan-4a-2,:,,,"  
"ochan-4a-3,:,,,"  
"ochan-4a-4,:,,,"  
"ochan-4a-5,:,,,"  
"ochan-4a-6,:,,,"  
"ochan-4a-7,:,,,"  
"ochan-4a-8,:,,,"
```

Screen continues on next page.

Screen continued from previous page.

```
"ochan-4a-9, : , , , , "  
"ochan-4a-10, : , , , , "  
"ochan-4a-11, : , , , , "  
"ochan-4a-12, : , , , , "  
"ochan-4a-13, : , , , , "  
"ochan-4a-14, : , , , , "  
"ochan-4a-15, : , , , , "  
"ochan-4a-16, : , , , , "  
"ochan-4b-1, : , , , , "  
"ochan-4b-2, : , , , , "  
"ochan-4b-3, : , , , , "  
"ochan-4b-4, : , , , , "  
"ochan-4b-5, : , , , , "  
"ochan-4b-6, : , , , , "  
"ochan-4b-7, : , , , , "  
"ochan-4b-8, : , , , , "  
"ochan-4b-9, : , , , , "  
"ochan-4b-10, : , , , , "  
"ochan-4b-11, : , , , , "  
"ochan-4b-12, : , , , , "  
"ochan-4b-13, : , , , , "  
"ochan-4b-14, : , , , , "  
"ochan-4b-15, : , , , , "  
"ochan-4b-16, : , , , , "  
  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command. If an **RTRV-STATE** command is received with an invalid *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
  
;
```

## RELATED TL1 COMMANDS/MESSAGES

```
ENT-PROT-xxx  
ENT-xxx  
OPR-PROTNSW-OC3  
OPR-PROTNSW-OC12  
OPR-PROTNSW-OC48
```

OPR-PROTNSW-SWFBR  
OPR-PROTNSW-xxx  
RLS-PROTNSW-OC3  
RLS-PROTNSW-OC12  
RLS-PROTNSW-OC48  
RLS-PROTNSW-SWFBR  
RLS-PROTNSW-xxx  
RTRV-PROT-xxx  
SET-ATTR-xxx

## RTRV-SUPR

**RTRV-SUPR:** Retrieve Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-SUPR:***tid:aid:ctag[:type];*

## DESCRIPTION

**RTRV-SUPR** command messages can be initiated by a user to retrieve the current provisioned state and current state of the supervisory (SUPR) channel. This command retrieves all supervisory channel parameter settings that are provisionable via **ENT-SUPR** commands pertaining to the addressed OLS, reported one line per supervisory channel.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the entity for which the report is requested.  Entity: Supervisory Channel (End Terminals) Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)  Entity: Supervisory Channel [Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>type</i>	Type. A value for this parameter is neither expected nor allowed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

Because the network element supports pre-provisioning of parameters, lines are included for all applicable *aid* values in response to this command, whether or not the present equipage is capable of supporting the type of facility specified.

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

In response to a valid **RTRV-SUPR** command, the following output report is returned, sorted on *SUPR* channel data by the *supr\_aid* value.

```
sid date time
M ctag COMPLD
"supr_aid:::[level,]ntfncde,sdthr"
"supr_aid:::[level,]ntfncde,sdthr"
.      .      .
.      .      .
.      .      .
"supr_aid:::[level,]ntfncde,sdthr"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

- supr\_aid* Supervisory channel access identifier. This is the supervisory channel address for which output is being reported.
- level* Signal level. This parameter is the signal level type being supported by the CMS port or supervisory channel specified in the addressed slot (if equipped). If equipped, the *level* parameter is reported in LEVEL=xx format where xx has the following value:
- |          |   |
|----------|---|
| OC3/STM1 | This specifies that the CMS port signal or the supervisory channel is OC3/STM1 level. |
|----------|---|
- No *level* value is reported for unequipped slots.
- sdthr* Signal degrade threshold. This parameter is the signal degrade Bit Error Rate (BER) threshold for the facility serviced by the addressed supervisory channel. The *sdthr* parameter is reported in SDTHR=xx format where xx has one of the following values:
- |    |   |
|----|---|
| -9 | This signifies that the signal degrade threshold is set at a BER of $10^{-9}$ . |
| -8 | This signifies that the signal degrade threshold is set at a BER of $10^{-8}$ . |
| -7 | This signifies that the signal degrade threshold is set at a BER of $10^{-7}$ . |
| -6 | This signifies that the signal degrade threshold is set at a BER of $10^{-6}$ . |

- 5 This signifies that the signal degrade threshold is set at a BER of  $10^{-5}$ .

## EXAMPLE INPUT/OUTPUT

Line wrapping is not supported in the **OUTPUT FORMAT**. Output lines are broken here **only** for the convenience of the reader.

The example below shows the response to a query concerning all supervisory channels associated with all optical lines (*supr-all*) for an OLS End Terminal.

```
rtrv-supr:LT-OLS:supr-all:123456;  
  
IP 123456  
<  
  
LT-OLS 93-10-26 16:42:11  
M 123456 COMPLD  
"supr-1a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-2a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-3a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-4a:::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
;
```

The example below shows the response to a query concerning all supervisory channels associated with all optical lines (*supr-all*) for an OLS Repeater.

```
rtrv-supr:LT-OLS:supr-all:123456;  
  
IP 123456  
<  
  
LT-OLS 93-10-26 16:42:11  
M 123456 COMPLD  
"supr-1a::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-1b::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-2a::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-2b::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-3a::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-3b::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-4a::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
"supr-4b::LEVEL=OC3,NTFCNCDE=CR,SDTHR=-6"  
  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives this command with any extra (beyond the input format specification above) null or non-null command parameter blocks (:), parameters (,), or termination characters (;), the following error response is returned:

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

If the network element receives a **RTRV** command without an *aid* value or with an *aid* value that is invalid for this command, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier, AID missing or inconsistent
   with modifier value */
;
```

If the network element receives this command with an invalid *type* value, the following error response is returned:

```
sid date time
M ctag DENY
INUP
/* Input, Non-null Unimplemented Parameter, TYPE must be null */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**ENT-SUPR**

**SET-ATTR-SUPR**

## RTRV-SYS

**RTRV-SYS:** Retrieve System

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-SYS**:*tid*:*ctag*;

## DESCRIPTION

Execution of this command on a network element retrieves the attributes associated with that network element's system or X.25 or CIT port. The system level and X.25 port attributes are the information that is provisioned by the **set-network element** CIT-PC command. The CIT port attributes are provisioned via the **set-security-port** CIT-PC command.

Execution of this command on a network element retrieves the attributes associated with that network element's system or X.25 ports. The system level and X.25 port attributes are the information that is provisioned by the **set-network element** CIT-PC command.

The **RTRV-SYS** command can be initiated by a user to retrieve network element attributes associated with that network element at the system level or with the X.25 or CIT port parameters that are currently in effect.

The **RTRV-SYS** command can be initiated by a user to retrieve network element attributes associated with that network element at the system level or with the X.25 port parameters that are currently in effect.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If there is system information to report, the following output message is returned:

```
sid date time
M ctag COMPLD
"tid=system_name,dsne=x,x25ps=x"
"dirn=x,std=x,almgrp=n,agne=x"
"side1_sys=x,side1_opr=x,side2_sys=x,side2_opr=x"
;
```

## OUTPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%# The initial value for <i>tid</i> is LT-FT-2000.
<i>dsne</i>	The <i>dsne</i> indicates whether or not the network element identified by the <i>tid</i> is serving as the Directory Service-Network Element in a Self Healing Ring or subnetwork. It takes the values <i>yes</i> and <i>no</i> .
<i>x25ps</i>	X.25 Packet Size. <i>x25ps</i> may have a value of 256 or 128. This parameter determines the TL1 packet size for the X.25 interface.
<i>almgrp</i>	Alarm Group, [also known as Sonet Maintenance Sub-Branch or SMSB]. <i>almgrp</i> may have an integer value between 0 and 255, inclusive. This parameter determines the set of remote NEs with which the local NE can exchange remote alarm information. 0 value indicates that no remote alarm information is exchanged.
<i>agne</i>	Alarm Gateway Network Element. <i>agne</i> may have a value of "YES" or "NO". This parameter determines whether the local network element serves its Alarm Group or SMSB as an AGNE or not. [For further details on an AGNE's role, refer to the PF-2000 Interworking Specification Document, Section 4.4.]
<i>dirn</i>	Direction. For single facing end terminals, <i>dirn</i> has a value of 1A-TX,1A-RCV or DUAL. 1A-TX indicates that the optical lines 1A, 2A, 3A, and 4A are carrying traffic in the transmit direction (out of OLS) and optical lines 1B, 2B, 3B and 4B are carrying traffic in receive direction (that is, into OLS). The factory default value of the parameter is 1A-TX. This parameter is significant in OLS end terminals, but not in OLS repeaters. An OLS end terminal provisioned as 1A-TX indicates that the output from the telemetry pack is connected

to (for example,) 1A OA circuit pack and the input is connected to 1B OA circuit pack i.e optical line 1A is carrying traffic in transmit direction. At the other end terminal the telemetry pack should have reverse orientation in the sense, that as it is receiving traffic on line 1A its input should be connected to 1A OA circuit pack and its output should be connected to 1B OA circuit pack. Therefore, this particular end terminal should be provisioned as 1A-RCV.

For dual facing end terminals, *dirn* has the value DUAL. DUAL indicates that the optical line 1B/3B is carrying traffic in the transmit direction (out of OLS) on side 1 (east) and that the optical line 2A/4A is carrying traffic in the transmit direction (out of OLS) on side 2 (west). Also, optical line 1A/3A is carrying traffic in receive direction (that is, into OLS) on side 1 and optical line 2B/4B is carrying traffic in receive directions (that is, into OLS) on side 2. An OLS end terminal provisioned as DUAL indicates that the optical lines 1 and 3 and TLM 1A/3A are connected as in "1A-RCV" mode while optical lines 2 and 4 and TLM 2A/4A are connected as in "1A-TX" mode.

The single OA configuration is an exception to above definition. For single OA configuration, a terminal in "1A-TX" mode has the telemetry output from TLM xA going to OA in oa-xB slot. Here x=1-4 for non dual terminals and x=2,4 for dual facing terminals. Similarly, a terminal in "1A-RCV" mode has the telemetry output from TLM yA going to OA in oa-yA slot. Here y=1-4 for non dual end terminals, y=1,3 for dual facing terminals.

However, in a single OA the relative placement of OMU/ODU and OAs remains same as in a 2 OA configuration.

**⇒ NOTE:**

A RTRV-SYS report on an OLS operating in the repeater mode would return dirn=-, indicating that no valid provisioned value exists.

*side1\_sys*

Side 1 System Type. This parameter reports the provisioned system configuration of side 1 of network element. Side 1 of of a network element refers to optical line pairs 1-4 on a regular end terminal or repeater. It refers to optical line pairs 1 and 3 if the terminal is provisioned as "DUAL". This parameter can have the following values: A,B,1\_OA. The value **A** sets all optical amplifiers in side 1 in their default mode. The value **B** sets side 1 of system to support mode "B" if all requirements to transition in operating mode **B** are satisfied. The value of **1\_OA** sets side 1 to support single OA configuration if all requirements to transition in single OA mode are satisfied.

*side1\_opr*

Side 1 operating system type. This parameter reports the actual operating system configuration. The reported values are "1\_OA" and "2\_OA". For side 1 (of dual and non dual

terminals) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 1 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

For side 2 (of dual facing terminal) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 2 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

If a side is operating in single OA mode, the operating mode is reported as "1\_OA".

An LEA105 in a side operating in single OA mode, assumes pump power setting consistent with single OA mode. If a side provisioned as single OA is not operating in single OA mode, an alarm is raised.

The alarm suppresses the equipage inconsistent with provisioned mode alarm for OA pack associated with ODU thru back plane.

The operating mode is reported as "2\_OA". If operating mode is inconsistent with provisioned mode, all OAs in the side operate with unchanged settings. On booting for the first time, the packs will assume original value settings. A side provisioned to operate in any configuration except single OA shall always report operating mode as "2\_OA".

For these configurations, operating mode is always consistent with provisioned mode.

*side2\_sys*

Side 2 System Type. This parameter reports the provisioned mode for side 2 of network element. Side 2 implies optical line pairs 2 and 4 on a terminal provisioned as a dual facing terminal. This parameter can have the following values: A,B,1\_OA. The value **A** sets all optical amplifiers in side 2 in their default mode. The value **B** sets side 2 to support mode "B" if all requirements to transition in operating mode **B** are satisfied. The value of **1\_OA** sets side 2 to support single OA configuration if all requirements to transition in single OA mode are satisfied.

*side2\_opr*

Side 2 operating system type. This parameter reports the actual operating system configuration. The reported values are "1\_OA" or "2\_OA". For side 1 (of dual and non dual terminals) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 1 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

For side 2 (of dual facing terminal) provisioned to operate in single OA mode, OLS shall operate in single OA mode if and only if:

- Optical Line 2 has an LEA105, or no circuit pack, in the slot associated with ODU thru backplane connection.

If a side is operating in single OA mode, the operating mode is reported as "1\_OA".

An LEA105 in a side operating in single OA mode, assumes pump power setting consistent with single OA mode. If a side provisioned as single OA is not operating in single OA mode, an alarm is raised.

The alarm suppresses the equipage inconsistent with provisioned mode alarm for OA pack associated with ODU thru back plane.

The operating mode is reported as "2\_OA". If operating mode is inconsistent with provisioned mode, all OAs in the side operate with unchanged settings. On booting for the first time, the packs will assume original value settings. A side provisioned to operate in any configuration except single OA shall always report operating mode as "2\_OA".

For these configurations, operating mode is always consistent with provisioned mode.

*std*

Standard. This parameter reports if the NE is configured for operation in SONET or SDH environment.

## EXAMPLE OUTPUT

```
RTRV-SYS:LT-PF-2000::123456;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
"tid=LT-PF-2000, dsne=yes, x25ps=256, dirn=1A-TX"  
"almgrp=10, agne=yes"  
"dce=t11, baud_t11-dce=9600, dte=cit"  
;
```

```
RTRV-SYS:LT-PF-2000::123456;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
"tid=LT-PF-2000, dsne=yes, x25ps=256, dirn=1A-TX"  
"almgrp=10, agne=yes"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

## RELATED TL1 COMMANDS/MESSAGES

**ENT-SYS**

**INIT-SYS**

## RTRV-TH-ALL

**RTRV-TH-ALL:** Retrieve Threshold All

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-TH-ALL:tid:aid:ctag::[montype],[locn][,tmper];
```

## DESCRIPTION



### WARNING:

Use of this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-STS-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

The **RTRV-TH-ALL** instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for all signal types (OLINE, OCHAN, and SUPR).

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the facilities for which threshold levels are being retrieved. The only valid value for this parameter is <b>ALL</b> .  Entity: All Legal Values: (ALL)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved.

This parameter must be specified for one of the following values:

- LBC-P1 (Laser Bias Current for Pump 1)
- LBC-P2 (Laser Bias Current for Pump 2)
- LBFC-P1 (Laser Backface Current for Pump 1)
- LBFC-P2 (Laser Backface Current for Pump 2)
- TOPR-OL (Total Received Power - Optical Line)
- SPR-C (Optical Channel Signal Power)
- CVL (Coding violation count - Line Near End)
- ESL (Errored second count - Line Near End)
- SESL (Severely errored second count - Line Near End)
- UASL (Unavailable second count - Line Near End)
- SPR-SU (Signal power - Supervisory)
- LBC-SU (Laser Bias Current - Supervisory)
- ALL (all applicable montype values)

If no value is provided for this parameter, the value of **ALL** is assumed.

*locn* Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".

*dirn* Direction of monitoring. This parameter indicates the direction for which the performance data is being retrieved and is relative to the facility identified by the AID. This parameter, if specified, must have one of the following values: "NA", "RCV", or "AZ".

**NA** Not applicable (default).

**RCV** Receive direction of transmission.

**AZ** A-Z direction which is functionally the same as RCV.

If no value is provided for this parameter, *NA* is assumed.

*tper* Time period. This requests performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

**15-MIN** This requests PM data in 15-minute intervals.

**1-DAY** This requests daily PM data.

**ALL** This requests all PM data for the specified facilities.

If no value is provided for this parameter, *ALL* is assumed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may have a detrimental effect on the OS/network element network bandwidth. Lucent Technologies does not recommend the use of this command. Upon receiving this command, the network element could be required to transmit over 1 Megabyte of data from its performance-monitoring bins to report for one network element Terminal. Furthermore, Bellcore **strongly suggests** to NMA users via SR-ST5-001665, Issue 2, that this command construct **not** be used due to the potential strain it may place on the OS/network element network bandwidth.

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
  .      .      .      .
  .      .      .      .
  .      .      .      .
  "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

- aid* Access identifier. This identifies the facility for which threshold levels are being retrieved.
- aidtype* The type of access identifier. Valid values for *aidtype* are as follows:  
 OCHAN the optical channels for OLS.  
 OLINe the optical line for OLS.  
 SUPR the OC3 level supervisory channel for OLS.
- montype* Monitored parameter for which threshold level is being retrieved. The threshold value of a *montype* will not be displayed in the output report unless it is user provisionable.
- locn* Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is:  
 NEND Near-end
- dirn* Direction. This specifies the direction in which the PM data is to be retrieved and is relative to the facility identified by the AID.
- thlev* Current threshold level for the monitored parameter.  
 Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

*tmper* Accumulation time period for the PM information.

*tcarpt* TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified *montype* for the given *tmper*. A value of `ENABLE` means TCA autonomous reporting is enabled and a value of `DISABLE` indicates TCA autonomous reporting is disabled.

## EXAMPLE INPUT/OUTPUT

Command to retrieve the cvl threshold parameter for all signal types:

```
rtrv-th-all:LT-FT-2000:all:123456::cvl,nend,1-day;

IP 123456
<

LT-FT-2000 94-03-22 16:12:12
M 123456 COMPLD
  "supr-1a,SUPR:CVL,NEND,NA,140,1-DAY,DISABLE"
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or inconsistent
  with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

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

The network element returns the following error response if the *locn* value is invalid.

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

The network element returns the following error response if the *tmper* value is invalid.

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-ALL

SET-TH-xxx

REPT EVT

## RTRV-TH-OCHAN

**RTRV-TH-OCHAN:** Retrieve Threshold Optical\_Channel

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-TH-OCHAN:** *tid:aid:ctag:[montype],[locn][,tmper];*

## DESCRIPTION

The **RTRV-TH-OCHAN** instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for optical channel signal types.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the facility for which threshold levels are being retrieved.  Entity: Optical Channel  Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved. This parameter must be specified for one of the following values:  "SPR-C" (Optical Channel Signal Power), or "ALL" (all applicable montype values).  If no value is provided for this parameter, the value of <b>ALL</b> is assumed.  Applicable output lines are ordered as follows: <ol style="list-style-type: none"><li>1. By applicable PM parameters/<i>montypes</i> per <i>aid</i>.  The output order of <i>montypes</i> the same as in the RTRV-PM report.</li></ol>

2. By requested time intervals (*tmper*)s, starting with the current time interval. The output order of (Cltmper is the same as in the RTRV-PM command.
- locn* Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".
- tmper* Time period. This requests PM data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".
- 15-MIN** This requests PM data in 15-minute intervals.
- 1-DAY** This requests daily PM data.
- ALL** This requests all PM data for the selected facilities.
- If no value is provided for *tmper*, *15-MIN* is assumed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
  .
  .
  .
  "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

- aid* Access identifier. This identifies the facility for which threshold levels are being retrieved.
- aidtype* The type of access identifier. Valid values for *aidtype* are as follows:  
OCHAN the optical channels for OLS.

<i>montype</i>	Monitored parameter for which threshold level is being retrieved. The threshold value of a <i>montype</i> will not be displayed in the output report unless it is user provisionable.
<i>locn</i>	Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is: NEND          Near-end
<i>thlev</i>	Current threshold level for the monitored parameter. Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.
<i>tmper</i>	Accumulation time period for the PM information.
<i>tcarpt</i>	TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified <i>montype</i> for the given <i>tmper</i> . A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

## EXAMPLE INPUT/OUTPUT

The command to retrieve the optical channel's SPR-C threshold parameter for ochan-1a-1 is:

```
rtrv-th-ochan:LT-OLS:ochan-1a-1:123456::spr-c,,15-min;  
  
IP 123456  
<  
  
LT-OLS 97-07-09 10:47:56  
M 123456 COMPLD  
"ochan-1a-1,OCHAN:SPR-C,NEND,NA,60,15-MIN,ENABLE"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

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

The network element returns the following error response if the *locn* value is invalid.

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

The network element returns the following error response if the *tmper* value is invalid.

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OCHAN

SET-TH-OCHAN  
REPT EVT OCHAN

## RTRV-TH-OLINE

**RTRV-TH-OLINE:** Retrieve Threshold Optical\_Line

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-TH-OLINE:tid:aid:ctag:[montype],[locn][,tmper];
```

## DESCRIPTION

The **RTRV-TH-OLINE** instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for optical line signal types.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the facility for which threshold levels are being retrieved.  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved.  This parameter must be specified for one of the following values: "TOPR-OL" (Total Received Power - Optical Line), "ALL" (all applicable montype values).  If no value is provided for this parameter, the value of <b>ALL</b> is assumed.  Applicable output lines are ordered as follows: <ol style="list-style-type: none"><li>By applicable PM parameters/<i>montypes</i> per <i>aid</i>.  The output order of <i>montypes</i> the same as in the RTRV-PM report.</li></ol>

2. By requested time intervals (*tmper*)s, starting with the current time interval. The output order of (Cltmper is the same as in the RTRV-PM command.
- locn* Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".
- tmper* Time period. This requests PM data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".
- 15-MIN** This requests PM data in 15-minute intervals.
- 1-DAY** This requests daily PM data.
- ALL** This requests all PM data for the selected facilities.
- If no value is provided for *tmper*, *15-MIN* is assumed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
"aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
. . . .
. . . .
. . . .
"aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

- aid* Access identifier. This identifies the facility for which threshold levels are being retrieved.
- aidtype* The type of access identifier.  
OLINE the optical line for OLS.
- montype* Monitored parameter for which threshold level is being retrieved. The threshold value of a *montype* will not be displayed in the output report

unless it is user provisionable.

<i>locn</i>	Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is:  NEND           Near-end
<i>thlev</i>	Current threshold level for the monitored parameter.  Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.
<i>tmper</i>	Accumulation time period for the PM information.
<i>tcarpt</i>	TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified <i>montype</i> for the given <i>tmper</i> . A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

## EXAMPLE INPUT/OUTPUT

The command to retrieve the optical oline's TOPR-OL threshold parameter for oline-1a is:

```
rtrv-th-oline:LT-OLS:oline-1a:123456::topr-ol,,1-day;  
  
IP 123456  
<  
  
LT-OLS 97-07-09 11:42:10  
M 123456 COMPLD  
"oline-1a,OLINE:TOPR-OL,NEND,NA,60,1-DAY,ENABLE"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

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

The network element returns the following error response if the *locn* value is invalid.

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

The network element returns the following error response if the *tmper* value is invalid.

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OLINE

SET-TH-OLINE  
REPT EVT OLINE

## RTRV-TH-SUPR

**RTRV-TH-SUPR:** Retrieve Threshold Supervisory

The privilege level for this command is REPORTS.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
RTRV-TH-SUPR:tid:aid:ctag:[montype],[locn][,tmper];
```

## DESCRIPTION

The **RTRV-TH-SUPR** instructs a network element to send the current threshold level and TCA autonomous reporting status of one or more monitored parameters for which violation will trigger an automatic message for optical carrier signal level 3 (OC-3) supervisory channel signals.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the facility for which threshold levels are being retrieved.  Entity: Supervisory Channel (End Terminals) Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)  Entity: Supervisory Channel [Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	Monitored parameter type. This is the PM parameter type for which a threshold is being retrieved.  This parameter must be specified for one of the following values: <ul style="list-style-type: none"><li>• CVL (Coding violation count - Line Near End)</li><li>• ESL (Errored second count - Line Near End)</li><li>• SESL (Severely errored second count - Line Near End)</li><li>• UASL (Unavailable second count - Line Near End)</li></ul>

- ALL (all applicable montype values)

If no value is provided for this parameter, the value of **ALL** is assumed.

Applicable output lines are ordered as follows:

1. By applicable PM parameters/*montypes* per *aid*.  
The output order of *montypes* the same as in the RTRV-PM report.
2. By requested time intervals (*tmper*)s, starting with the current time interval. The output order of (Cltmper is the same as in the RTRV-PM command.

*locn* Location. This is the location where the threshold is being retrieved and refers to the facility identified by the *aid*. The only valid location for this parameter is: "NEND".

*tmper* Time period. This requests PM data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN", "1-DAY", or "ALL".

**15-MIN** This requests PM data in 15-minute intervals.

**1-DAY** This requests daily PM data.

**ALL** This requests all PM data for the selected facilities.

If no value is provided for *tmper*, *15-MIN* is assumed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

```

sid date time
M ctag COMPLD
  "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
  .      .      .      .
  .      .      .      .
  .      .      .      .
  "aid,aidtype:montype,locn,dirn,thlev,tmper,tcarpt"
;
```

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

<i>aid</i>	Access identifier. This identifies the facility for which threshold levels are being retrieved.
<i>aidtype</i>	The type of access identifier. Valid values for <i>aidtype</i> are as follows: SUPR the OC3 level supervisory channel for OLS.
<i>montype</i>	Monitored parameter for which threshold level is being retrieved. The threshold value of a <i>montype</i> will not be displayed in the output report unless it is user provisionable.
<i>locn</i>	Location. This is the location where the threshold is to be retrieved and refers to the facility identified by the AID. The valid location is: NEND Near-end
<i>thlev</i>	Current threshold level for the monitored parameter. Parameter 'thlev' for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.
<i>tmper</i>	Accumulation time period for the PM information.
<i>tcarpt</i>	TCA report. This parameter indicates if threshold crossing alert (TCA) autonomous reporting has been enabled or disabled for the specified <i>montype</i> for the given <i>tmper</i> . A value of ENABLE means TCA autonomous reporting is enabled and a value of DISABLE indicates TCA autonomous reporting is disabled.

## EXAMPLE INPUT/OUTPUT

Command to retrieve the supervisory channel's cvl threshold parameter for supr-1a and ,

```
rtrv-th-supr:LT-FT-2000:supr-1a:123456::cvl,nend,1-day;  
  
IP 123456  
<  
  
LT-FT-2000 94-03-22 16:12:12  
M 123456 COMPLD  
"supr-1a,SUPR:CVL,NEND,NA,140,1-DAY,DISABLE"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is not supported.

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

The network element returns the following error response if the *locn* value is invalid.

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

The network element returns the following error response if the *timper* value is invalid.

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-SUPR

SET-TH-SUPR

REPT EVT SUPR

## RTRV-USER-SECU

**RTRV-USER-SECU:** Retrieve User Security

The privilege level for this command is REPORTS.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**RTRV-USER-SECU:***tid:[uid]:ctag;*

## DESCRIPTION

**RTRV-USER-SECU** command is used by an appropriate administrator to retrieve the security parameters associated with a user, except for the user's password, which cannot be retrieved.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>uid</i>	This is the User Identifier of a user. If specified, the valid value is a single uid. If omitted, this command retrieves user security parameters for all the existing user identification.  The word "all" could be used as a uid.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element has user identifiers to report, the following normal completion response is returned:

```
sid date time
M ctag COMPLD
  "uid: ,uap,vst,lastlog,expdat"
;
```

When multiple users' security parameters are displayed, the entries are sorted by "uid" values in alphabetical (ASCII) order.

If the network element receives a **RTRV-USER-SECU** command with a non-existing *uid*, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

- uid* User Identifier. This is included in the command by the OS and enables the OS to retrieve user authorization information that exists on the NE. Valid values are a case sensitive alphanumeric string of 1 to 10 characters. If the network element receives a **RTRV-USER-SECU** with a null value for *uid*, it returns all the user accounts with privileged users first, followed by general users, then reports-only users.
- uap* User Access Privilege. It is displayed in the format of Cw&Fx&PMy&Sz. where: C, F, PM, S are function categories, and where: w, x, y, z are value 1 to 5 for user authorization level.
- See [REQ ACT\_USER-270] for more information.
- vst* Visitor. This indicates that this User Identifier is assigned for temporary access to the network element. If there is a visitor user identifier, indicate yes and, if not, indicate no.
- lastlog* Last logged in. This is the date and time of the last session established by this *uid*. It is output in the format "MM-DD HH-MM-SS" with the date and time separated by one space. If no information is available regarding the last login session for this *uid* (for example, this is the first login session), this output field is not populated.
- expdat* Expiration Date. This is the **EXPDAT** that is associated with a visitor's login in the following format: YY-MM-DD, where YY is the last two digits of the year ranging from 00 to 99; MM is the month of the year ranging from 01 to 12; and DD is the day of the month ranging from 01 to 31.

If there is no visitor, the expiration date is not populated.

## EXAMPLE INPUT/OUTPUT

```
RTRV-USER-SECU:LT-PF-2000:kjlee:123456;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
"kjlee:,C4&F3&PM1&S2,yes,12-23 18-31-17,96-12-27"  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If the network element receives a **RTRV-USER-SECU** command with an invalid *uid*, the following error response is returned:

```
sid date time  
M ctag DENY  
PIUI  
/* Privilege, Illegal User Identity, invalid UID */  
;
```

## RELATED TL1 COMMANDS/MESSAGES

**ENT-USER-SECU**

**ED-USER-SECU**

**DLT-USER-SECU**

## SET-ATTR-ALM

**SET-ATTR-ALM:** Set Attribute Alarm

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
SET-ATTR-ALM:tid::ctag[::spec_block];
```

## DESCRIPTION

The **SET-ATTR-ALM** command can be executed to provision the incoming signal alarm delay and the alarm clear delay intervals.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>spec_block</i>	Specific block. Parameters included within the specific block are positionally independent and are specified using a name-defined construct of: <i>PARAMETER=value</i> . The specific block may have one, more than one or none of the following parameters specified within it in a comma-separated list. Furthermore, each parameter listed below can appear at most once within the specific block for a single <b>SET-ATTR-ALM</b> command. The parameters are listed in alphabetic order.  <b>almdel</b> Alarm delay. This is the incoming signal alarm delay parameter. Legal values are 0-120 (seconds) or it may be omitted, in which case the value of the parameter is left unchanged.  <b>clrdel</b> Alarm clear delay. This is the alarm clear delay parameter. Legal values are 0-120 (seconds) or it may be omitted, in which case the value of the parameter is left unchanged.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **SET-ATTR-ALM** request, the following normal completion response is returned.

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

If the **SET-ATTR-ALM** command does not alter the existing attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown above).

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-ALM** command that provisions the incoming signal delay to 10 seconds and provision the alarm clear delay to 30 seconds.

```
SET-ATTR-ALM:LT-PF-2000::123456:::almdel=10,clrdel=30;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

The following example shows a **SET-ATTR-ALM** command that provisions the alarm clear delay to 14 seconds.

```
SET-ATTR-ALM:LT-PF-2000::123456:::clrdel=14;

IP 123456
<

      LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If a **SET-ATTR-ALM** command is received with an invalid **almdel** parameter, the following error response is returned:

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

If a **SET-ATTR-ALM** command is received with an invalid **clrdel** parameter, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-ATTR-ALM**

## SET-ATTR-CONT

**SET-ATTR-CONT:** Set Attribute Control

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**SET-ATTR-CONT** :*tid*:*aid*:*ctag*:*conttype*;

## DESCRIPTION

The **SET-ATTR-CONT** command can be executed to provision (define) the description associated with an external control.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. The <i>aid</i> identifies the external miscellaneous discrete control for which attributes are being set. An <i>aid</i> value must be provided.  Entity: Single Point (Control) Legal Values: (CONT)-(1-36)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>conttype</i>	Control Type. The <i>conttype</i> is the text string associated with the selected miscellaneous discrete control. It is an alphanumeric string, upper and lower case, spaces and periods allowed, up to 26 characters long. <i>conttype</i> is case sensitive and is enclosed with escaped quotes (\"). A <i>conttype</i> entry is required.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the **SET-ATTR-CONT** request, the following normal completion response is returned.

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

If the **SET-ATTR-CONT** command does not alter the already provisioned description, the network element will not deny the command. Instead the system will respond with the completion message (shown above).

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-CONT** command that provisions the text string for miscellaneous discrete control 3 to `"fan3"` for a PF-2000 system:

```
SET-ATTR-CONT:LT-PF-2000:CONT-3:123456::"fan3";

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If a **SET-ATTR-CONT** command is received with an invalid access identifier, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

If a **SET-ATTR-CONT** command is entered with an unimplemented parameter, the following (representative) error response is returned:

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

If a **SET-ATTR-CONT** command is entered with an invalid conttype parameter the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-ATTR-CONT**

## SET-ATTR-ENV

**SET-ATTR-ENV:** Set Attribute Environment

The privilege level for this command is PRIVILEGED.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**SET-ATTR-ENV:***tid:aid:ctag::[ntfcncde],,almmsg;*

## DESCRIPTION

**SET-ATTR-ENV** commands can be initiated to request the network element to set the notification code (alarm level) and alarm message (condition description) associated with environmental alarm/status points.

Environmental *alarm* conditions are reported by TL1 autonomous REPT ALM ENV messages. Environmental *status* conditions are reported by TL1 autonomous REPT EVT COM messages and periodically via REPT COND. The provisioned notification code, alarm type, and alarm message are included in the TL1 messages reporting the occurrence of an environmental condition.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the environmental points to be provisioned.  Entity: Single Point (Environmental)  Legal Values: (ENV)-(1-144)  A null value is not permitted with this parameter.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>ntfcncde</i>	Notification code. The alarm level associated with an environmental point may have one of the following values: The alarm "MJ_Prompt", "MN_Deferred", "NA_No_Alarm", "NR_No_Report", or "NO_Not_Indicated".  <b>MJ_Prompt</b> Major/Prompt. If provisioned as <b>MJ_Prompt</b> , the alarm level associated with the environmental point shall be <b>Prompt</b> (for

	SDH) or MJ (for SONET).
<b>MN_Deferred</b>	Minor/Deferred. If provisioned as <b>MN_Deferred</b> , the alarm level associated with the environmental point shall be <i>Deferred</i> (for SDH) or <i>MN</i> (for SONET).
<b>NA_No_Alarm</b>	Not Alarmed(for SONET)/No Alarm(for SDH). If provisioned as <b>NA_No_Alarm</b> , a status condition will be reported when the environmental point becomes active.
<b>NR_No_Report</b>	Not Reported(for SONET)/No Report(for SDH). If provisioned as <b>NR_No_Report</b> , no condition/alarm is reported when the addressed environmental point becomes active.
<b>NO_Not_Indicated</b>	Not Indicated(for SONET and SDH) the active environmental point will result in no failure indication being generated whatsoever for the underlying failure condition. No report, autonomous or otherwise will be generated and sent to the user.
<i>almmsg</i>	Alarm message. This is the condition description to be associated with the addressed environmental point. The description may be a string of up to 26 characters consisting of case-sensitive (upper-case and lower-case) alphanumerics, spaces, and "." (periods). The description must be enclosed using delimiters. The delimiter to be used is "\" [that is, backslash followed by double-quotes].  This parameter is an exception to the general rule of TL1 input parameters being case-insensitive.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the set attribute environment request, the following normal completion response is returned:

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

If the network element receives a valid **SET-ATTR-ENV** command, but the command

does not alter the existing alarm attributes, the network element provides a normal completion response.

## OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for **RTRV-HDR**.

## EXAMPLE INPUT/OUTPUT

```
SET-ATTR-ENV:LT-FT-2000:env-10:123456::MJ,,,\"environment 10\";  
  
IP 123456  
<  
  
LT-FT-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there apply to the **SET-ATTR-ENV** command, also.

If the network element receives a **SET-ATTR-ENV** command with an invalid or missing *aid* value, the following error response is returned:

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier */  
;
```

If the network element receives a **SET-ATTR-ENV** command with an invalid *ntfcncde* value, the following error response is returned:

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

If the network element receives a **SET-ATTR-ENV** command with an invalid *almmsg* value, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**RTRV-ATTR-ENV**

## SET-PM-STIME

**SET-PM-STIME** Set Performance\_Monitoring Start\_Time

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 2.0.

## INPUT FORMAT

**SET-PM-STIME**:*tid*::*ctag*::*start\_hour*;

## DESCRIPTION

The **SET-PM-STIME** command specifies the start time for the measurement of all twenty-four hour performance monitoring parameters.

## INPUT PARAMETERS

*tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:

[A-Z][a-z][0-9].+-%#

*ctag* Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for *ctag* are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

*start\_hour* Start Hour. The *start\_hour* is a position defined parameter which specifies the start hour for day bin measurements. It can take the value of an integer between 0 and 23.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Execution of this command may corrupt performance monitoring data.

## OUTPUT FORMAT

If the network element fully complies with the **SET-PM-STIME** request, the following normal completion response is returned.

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

If the **SET-PM-STIME** command does not alter the existing attributes, the network element will not deny the command. Instead the system will respond with the completion message (shown above).

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example shows a command **SET-PM-STIME** for the network element.

```
set-pm-stime:LT-PF-2000::CTAG::22;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M CTAG COMPLD
;
```

## ERROR RESPONSE

Refer to the **RTRV-HDR error responses** section. The error responses listed there also apply to this command. If a **SET-PM-STIME** command is received with an invalid **START\_HOUR** value, the following error response is returned:

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

**RELATED TL1 COMMANDS/MESSAGES**

RTRV-PM-STIME

## SET-SID

**SET-SID:** Set Source\_ Identification

The privilege level for this command is PRIVILEGED.

The OSI category for this command is SECURITY.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**SET-SID:***tid::ctag::sid;*

## DESCRIPTION



### CAUTION:

*Network element access is affected by this command.*

This command can be initiated by a user to change the target/source identification of the network element.

When the network element receives a **SET-SID** command, the network element will update its target/source identifier as requested.

The target/source identifier remains active until changed (for example, by the TL1 command **ENT-SYS** command or by the appropriate network element Craft Interface Terminal (CIT) command).

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the currently active name of the network element to which the command is addressed.
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>sid</i>	Target identifier. This is the new name of the network element to which the command is addressed.



### NOTE:

For proper operation of the TL1 interfaces, the *sid* must be unique for each network element within a subnetwork.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

## OUTPUT FORMAT

Refer to the **RTRV-HDR OUTPUT FORMAT** section. The requirements listed there apply to the **SET-SID** command also.

If the requested **SET-SID** command does not alter the existing condition, the network element shall not DENY the command. Instead the network element shall respond with a COMPLD message.

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example requests a change of the target identifier to LT-FT-2000 from LT-PF-2000:

```
set-sid:LT-PF-2000::123456::LT-FT-2000;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The requirements listed there apply to the **SET-SID** command also.

If the network element receives a **SET-SID** with an otherwise valid set of input parameter values but the *sid* specified in the command is syntactically incorrect, the following error response is returned:

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

If the network element receives a **SET-SID** without the *sid* parameter, the following error response is returned:

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

If the network element receives a **SET-SID** with an otherwise valid set of input parameter values but the command could not be completed by the network element, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

**ENT-SYS**

**RTRV-SYS**

## SET-TH-OCHAN

**SET-TH-OCHAN:** Set Threshold Optical\_Channel

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
SET-TH-OCHAN:tid:aid:ctag::montype,[thlev],[locn],[dirn],  
[tmper][,tcarpt];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

The **SET-TH\_OCHAN** command instructs a network element to set the threshold level for optical channel monitored parameters.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the facility to which the threshold applies.  Entity: Optical Channel  Legal Values: (OCHAN)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)-(ALL, 1-16)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	Monitored parameter type. This is the PM parameter type for which a threshold is being set. This parameter must be specified for one of the following values:  "SPR-C" (Optical Channel Signal Power), or "ALL" (all applicable montype values).
<i>thlev</i>	Threshold level. This is the threshold level to be set for the particular <i>montype</i> .

The value of *thlev* for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

Valid and original (that is, as set in the factory) threshold values for each applicable OCHAN *montype* are given below:

montype	legal range for 15-MIN tmper	original value for 15-MIN tmper	legal range for 1-DAY tmper	original value for 1-DAY tmper
SPR-C	0 - 100 (by 10's)	60	0 - 100 (by 10's)	60

*locn* Location. This is the location where the threshold is to be set and refers to the facility identified by the AID. The valid location is: "NEND" (that is, Near-end)

If null, the default value is **NEND**.

*dirn* Direction. This specifies the direction in which the threshold is to be set and is relative to the facility identified by the access identifier. The value of direction, if specified, must be the following value: "NA". If no value is provided for *dirn*, *NA* is assumed.

*tmper* Time period. The threshold is set for performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

**15-MIN** This requests PM data in 15-minute intervals.

**1-DAY** This requests daily PM data.

If no value is entered for *tmper*, **15-MIN** is assumed by the network element. The threshold setting of optical parameters in OLS is independent of bins. As a result, any change in threshold value for these parameters shall affect PM reporting only in the bin as specified by *tmper*.

*tcarpt* TCA report. This parameter is used to enable/disable threshold crossing alert (TCA) autonomous reporting of the specified *montype* for the specified *tmper*. This parameter, if specified, must have one of the following values: "ENABLE" or "DISABLE" where **ENABLE** enables TCA autonomous reporting and **DISABLE** disables TCA autonomous reporting. If no value is provided for *tcarpt*, it means "no changes" to this parameter value.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may affect the automatic reporting of performance monitoring threshold crossing alerts (TCAs).

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

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

If the requested **SET-TH-STS1** command does not alter the existing condition, the network element shall respond with a COMPLD message.

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

This message will set the quarter-hour bin threshold for SPR-C for optical channel 2 in optical line 2A of the network element.

```
set-th-ochan:LT-OLS:ochan-2a-2:123456::spr-c,,,,;

IP 123456
<

LT-OLS 97-07-09 01:16:46
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or inconsistent
  with modifier values*/
;
```

The network element returns the following error response if the *montype* value is missing or not supported.

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

The network element returns the following error response if the *thlev* value is out of range.

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

The network element returns the following error response if the *locn* value is invalid or inconsistent with *montype*.

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

The network element returns the following error response if the *tcarpt* value is invalid.

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

The network element returns the following error response if the *dirn* value is invalid.

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

The network element returns the following error response if the *tmper* value is invalid or conflicts with the command code modifier.

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OCHAN

RTRV-TH-OCHAN

REPT EVT OCHAN

## SET-TH-OLINE

**SET-TH-OLINE:** Set Threshold Optical\_Line

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
SET-TH-OLINE:tid:aid:ctag::montype,[thlev],[locn],[dirn],  
[tmper][,tcarpt];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

The **SET-TH\_OLINE** command instructs a network element to set the threshold level for optical line monitored parameters.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the facility to which the threshold applies.  Entity: Optical Line Legal Values: (OLINE)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>montype</i>	Monitored parameter type. This is the PM parameter type for which a threshold is being set.  This parameter must be specified for one of the following values: "TOPR-OL" (Total Received Power - Optical Line), "ALL" (all applicable montype values).
<i>thlev</i>	Threshold level. This is the threshold level to be set for the particular <i>montype</i> .  The value of <i>thlev</i> for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

Valid and original (that is, as set in the factory) threshold values for each applicable OLINE *montype* are given below:

<b>montype</b>	<b>legal range for 15-MIN tmper</b>	<b>original value for 15-MIN tmper</b>	<b>legal range for 1-DAY tmper</b>	<b>original value for 1-DAY tmper</b>
TOPR-OL	0 - 100 (by 10's)	60	0 - 100 (by 10's)	60

*locn* Location. This is the location where the threshold is to be set and refers to the facility identified by the AID. The valid location is: "NEND" (that is, Near-end)

If null, the default value is **NEND**.

*dirn* Direction. This specifies the direction in which the threshold is to be set and is relative to the facility identified by the access identifier. The value of direction, if specified, must be the following value: "NA". If no value is provided for *dirn*, **NA** is assumed.

*tmper* Time period. The threshold is set for performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

**15-MIN** This requests PM data in 15-minute intervals.

**1-DAY** This requests daily PM data.

If no value is entered for *tmper*, **15-MIN** is assumed by the network element. The threshold setting of optical parameters in OLS is independent of bins. As a result, any change in threshold value for these parameters shall affect PM reporting only in the bin as specified by *tmper*.

*tcarpt* TCA report. This parameter is used to enable/disable threshold crossing alert (TCA) autonomous reporting of the specified *montype* for the specified *tmper*. This parameter, if specified, must have one of the following values: "ENABLE" or "DISABLE" where **ENABLE** enables TCA autonomous reporting and **DISABLE** disables TCA autonomous reporting. If no value is provided for *tcarpt*, it means "no changes" to this parameter value.

### CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may affect the automatic reporting of performance monitoring threshold crossing alerts (TCAs).

### OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

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

If the requested **SET-TH-STS1** command does not alter the existing condition, the network element shall respond with a COMPLD message.

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The optical PM parameters are not collected based on time periods.

Set the quarter hour bin threshold for TOPR-OL for the optical line 1 and enable TCA autonomous reporting.

```
set-th-oline:LT-OLS:oline-1a:123456::topr-ol,60,nend,,15-min,disable;

IP 123456
<

LT-OLS 94-03-22 16:12:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR error responses** section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier, AID missing or inconsistent
with modifier values*/
;
```

The network element returns the following error response if the *montype* value is missing or not supported.

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

The network element returns the following error response if the *thlev* value is out of range.

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

The network element returns the following error response if the *locn* value is invalid or inconsistent with *montype*.

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

The network element returns the following error response if the *tcarpt* value is invalid.

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

The network element returns the following error response if the *dirn* value is invalid.

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

The network element returns the following error response if the *tmper* value is invalid or conflicts with the command code modifier.

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-OLINE

RTRV-TH-OLINE

REPT EVT OLINE

## SET-TH-SUPR

**SET-TH-SUPR:** Set Threshold Supervisory

The privilege level for this command is GENERAL.

The OSI category for this command is PERFORMANCE.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

```
SET-TH-SUPR:tid:aid:ctag::montype,[thlev],[locn],[dirn],  
[tmper][,tcarpt];
```

### ⇒ NOTE:

The above single-line command is presented as two lines for ease of reading.

## DESCRIPTION

The **SET-TH\_SUPR** command instructs a network element to set the threshold level for supervisory channel monitored parameters.

The supervisory channel parameters also assess the customer maintenance signal (CMS) when present, via PM monitoring of the CMS being received at the telemetry pack.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This identifies the facility to which the threshold applies.  The supervisory channel is provisionable in both the 1A and 1B directions at the OLS End Terminals, though the supervisory signal is applicable to only one direction (1A or 1B) at the OLS End Terminals. In addition, there is only one telemetry pack in slot 1A.  Entity: Supervisory Channel (End Terminals) Legal Values: (SUPR)-(ALL,1A,2A,3A,4A)  Entity: Supervisory Channel [Repeaters] Legal Values: (SUPR)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

*montype* Monitored parameter type. This is the PM parameter type for which a threshold is being set.

This parameter must be specified for one of the following values:

- CVL (Coding violation count - Line Near End)
- ESL (Errored second count - Line Near End)
- SESL (Severely errored second count - Line Near End)
- UASL (Unavailable second count - Line Near End)
- ALL (all applicable montype values)

*thlev* Threshold level. This is the threshold level to be set for the particular *montype*.

The value of *thlev* for coding violations is set using BER but reported, by the associated RTRV-TH command, as COUNT.

Valid and original (that is, as set in the factory) threshold values for each applicable SUPR *montype* are given below:

<b>montype</b>	<b>legal range for 15-MIN tmper</b>	<b>original value for 15-MIN tmper</b>	<b>legal range for 1-DAY tmper</b>	<b>original value for 1-DAY tmper</b>
CVL (count)	14 - 13997	140	1 - 1343693	1344
CVL (BER)	-10 - -7	-9	-12 - -7	-10
ESL	1 - 900	25	1 - 65535	250
SESL	1 - 63	10	1 - 4095	40
UASL	1 - 63	10	1 - 4095	10

Note: Both BER and count threshold values are listed for CVs. However, CVs are entered only in BER format and are reported only in CV count format.

*locn* Location. This is the location where the threshold is to be set and refers to the facility identified by the AID. The valid location is: "NEND" (that is, Near-end)

If null, the default value is **NEND**.

*dirn* Direction. This specifies the direction in which the threshold is to be set and is relative to the facility identified by the access identifier. The value of direction, if specified, must be the following value: "NA". If no value is provided for *dirn*, NA is assumed.

*tmper* Time period. The threshold is set for performance monitoring data information for a specified time interval. This parameter, if specified, must have one of the following values: "15-MIN" or "1-DAY".

**15-MIN** This requests PM data in 15-minute intervals.

**1-DAY** This requests daily PM data.

If no value is entered for *tmper*, **15-MIN** is assumed by the network element.

The threshold setting of optical parameters in OLS is independent of bins. As a result, any change in threshold value for these parameters shall affect PM reporting only in the bin as specified by *tmper*.

*tcarpt* TCA report. This parameter is used to enable/disable threshold crossing alert (TCA) autonomous reporting of the specified *montype* for the specified *tmper*. This parameter, if specified, must have one of the following values: "ENABLE" or "DISABLE" where **ENABLE** enables TCA autonomous reporting and **DISABLE** disables TCA autonomous reporting. If no value is provided for *tcarpt*, it means "no changes" to this parameter value.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command may affect the automatic reporting of performance monitoring threshold crossing alerts (TCAs).

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

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

If the requested **SET-TH-STS1** command does not alter the existing condition, the network element shall respond with a COMPLD message.

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

In the *tmper* input parameter of this command, the digital PM parameters of SUPR channel are collected on a per-bin basis for each SUPR channel, whereas the optical PM parameters are not collected based on time periods. Set the quarter-hour bin threshold for CVL for the supervisory channel-2a to -9.

```
set-th-supr:LT-OLS:supr-2a:123456::cvl,-9,nend,,15-min,enable;  
  
IP 123456  
<  
  
LT-OLS 97-07-09 17:26:14  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

The network element returns the following error response if the *aid* value is missing or invalid.

```
sid date time  
M ctag DENY  
IIAC  
/* Input, Invalid Access Identifier, AID missing or inconsistent  
with modifier values*/  
;
```

The network element returns the following error response if the *montype* value is missing or not supported.

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

The network element returns the following error response if the *thlev* value is out of range.

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

The network element returns the following error response if the *locn* value is invalid or inconsistent with *montype*.

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

The network element returns the following error response if the *tcarpt* value is invalid.

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

The network element returns the following error response if the *dirn* value is invalid.

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

The network element returns the following error response if the *tmper* value is invalid or conflicts with the command code modifier.

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

## RELATED TL1 COMMANDS/MESSAGES

RTRV-PM-SUPR

RTRV-TH-SUPR

REPT EVT SUPR

## TEST-ALM

**TEST-ALM:** Test Alarm

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

## INPUT FORMAT

```
TEST-ALM:tid::ctag::[mode][,repeat];
```

## DESCRIPTION

**TEST-ALM** command provides for specific and general tests of the audible and visible office alarms. The corresponding User Panel LEDs shall be illuminated simultaneously with each office alarm.

When the **TEST-ALM** command is entered, the system will exercise the audible and visible office alarms.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>mode</i>	Mode. This is the mode of the alarm test. This parameter can have one of the following values: "ALL", "CR", "MJ", or "MN". If no value is provided for this parameter, then <b>ALL</b> is assumed.
<i>repeat</i>	Repeat. This indicates the number of times the test will be repeated. This parameter must be an integer between 1 and 10. If no value is provided for this parameter, 1 is assumed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

```
TEST-ALM:LT-PF-2000::123456::MODE=CR,1;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR error responses** section. The error responses listed there also apply to this command.

If the network element receives a **TEST-ALM** command with an invalid *mode*, the following error response is returned:

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

If the network element receives this command with an invalid *repeat*, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## TEST-AUTO-LOCAL

**TEST-AUTO-LOCAL:** Test Auto Local

The privilege level for this command is PRIVILEGED.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

## INPUT FORMAT

**TEST-AUTO-LOCAL:** *tid:aid:ctag;*

## DESCRIPTION

**TEST-AUTO-LOCAL** command is used for turnup testing of the network element in an automated manner. This checks the internal node transmission paths that require cabling between packs. This test verifies transmission through the telemetry channel via the optical amplifiers and telemetry pack and also verifies transmission through the Customer Maintenance Signal (CMS) channel via the telemetry pack.

The output of this command is an indication of whether the test passed or failed.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>aid</i>	Access identifier. This is the address of the telemetry slot for which this command is intended.  Entity: Signal (SUPR, CMS) [End Terminals and Repeaters] Legal Values: (SUPR, CMS)-(ALL, 1, 2, 3, 4)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

**CAUTION:** This command interrupts transmission on the circuits being tested. It must only be run on out-of-service circuits.

**NOTE:** The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

In response to a valid instance of this command, the following output report is returned.

```

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

Both the OLS end and repeater terminals verify transmission through all supervisory channels via the optical amplifiers and telemetry packs. The end and repeater terminals have four lines in service.

## OUTPUT PARAMETER

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

<i>aid</i>	Slot access identifier. This is the address of the slot for which the test result is being reported. Valid values are for the address of the slot through which the requested SUPR and CMS signals go through.
<i>spec_block</i>	Specific block. This parameter field is used in a positionally independent comma separated list for returning a name defined parameter of: <i>PARAMETER=value</i> . The parameter(s) is (are) listed and explained below.
<i>result_status</i>	The result status field is used for returning the result of the test and it takes on the following values:
good	Test result was good or successful.
FAIL	Test result failed or was unsuccessful.
\“-\”	The entity was not tested.

## EXAMPLE INPUT/OUTPUT

The following example shows the response to the request for all supervisory channels via the optical amplifiers and the telemetry packs for the end ("supr-all") terminal.

```
test-auto-local:LT-OLS:supr-all:789012;  
  
IP 789012  
<  
  
LT-OLS 93-10-26 16:42:11  
M 789012 COMPLD  
  "t1m-1a::result_status=good"  
  "t1m-2a::result_status=good"  
  "t1m-3a::result_status=good"  
  "t1m-4a::result_status=good"  
  "t1m-1b::result_status=\"-\""  
  "t1m-2b::result_status=\"-\""  
  "t1m-3b::result_status=\"-\""  
  "t1m-4b::result_status=\"-\""  
  
;
```

The following example shows the response to the request for all supervisory channels via the optical amplifiers and the telemetry packs for the repeater ("supr-all") terminal.

```
test-auto-local:LT-OLS:supr-all:789012;

IP 789012
<

LT-OLS 93-10-26 16:42:11
M 789012 COMPLD
  "t1m-1a::result_status=good"
  "t1m-2a::result_status=good"
  "t1m-3a::result_status=good"
  "t1m-4a::result_status=good"
  "t1m-1b::result_status=good"
  "t1m-2b::result_status=good"
  "t1m-3b::result_status=good"
  "t1m-4b::result_status=good"
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If this command is received with an invalid access identifier, the following error response is returned:

```
sid date time
M ctag DENY
IIAC
/* Input, Invalid Access Identifier */
;
```

A condition may occur that (a) is not associated with the entity under test, and (b) would cause NE-ACTY to be lighted if the test wasn't running. Such conditions include the absence of a line controller in the case that the test is directed to a single line without a line controller, and the preemption of the high speed switch. In these cases the command shall be denied with error code (ECMD\_ABORTED\_FAULT):

```
sid date time
M ctag DENY
FNEA
/* Fault, Near End Activity
The requested test can not be completed because of a condition
(or conditions) giving rise to Near End Activity. */
;
```

If a test is addressed to a slot in the AUTO state, the command shall be denied with error code (ECMD\_AUTO):

```
sid date time
M ctag DENY
SNVS
/* Status, Not in Valid State
The requested command can not be executed because of the improper
status of the specified entity. */
;
```

## RELATED TL1 COMMANDS/MESSAGES

**TEST-AUTO-DSX**

## TEST-LED

**TEST-LED:** Test LED

The privilege level for this command is REPORTS.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

## INPUT FORMAT

**TEST-LED:***tid:[aid]:ctag[:repeat];*

## DESCRIPTION

This command provides for testing of the LEDs of the whole system or of each circuit pack.

The LED(s) under test is turned on for 10 seconds, then off for 10 seconds, after which it reverts to its normal operation. This command does not affect the operation of the office alarms.

The definition of "normal" is the state of the indicator immediately before the test was executed. After the test is executed, "normal" also includes any state changes during the test.

## INPUT PARAMETERS

*tid* Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  
[A-Z][a-z][0-9].+-%#

*aid* Access identifier. *aid* determines the slot or operations interface address whose LED is to be tested. If no value is provided for this field, **a11** is assumed.

Entity: All  
Legal Values: (ALL)

Entity: Slot (TOHCTL)  
Legal Values: (TOHCTL)

Entity: Operations Interface (User Panel)  
Legal Values: (USER)-(PANEL)

Entity: Slot (SYSCTL)  
Legal Values: (SYSCTL)

Entity: Slot (SYSTEMEM)  
Legal Values: (SYSTEMEM)

Entity: Slot (OA)  
Legal Values: (OA)-(ALL, 1A-4B)

Entity: Slot (TLM) [End Terminals]  
Legal Values: (TLM)-(ALL,1A,2A,3A,4A)

	Entity: Slot (TLM) [Repeaters] Legal Values: (TLM)-(ALL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B)
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.
<i>repeat</i>	Repeat. This indicates the number of times the test will be repeated. This parameter must be an integer between 1 and 10. If no value is provided for this parameter, 1 is assumed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

NOTE: The access identifier for each type of entity has a different set of legal values. Click on "HELP" to get the complete list of allowable values for each entity used by this command, where necessary.

NOTE: For the AID (Access Identifier), when the construct ALL is used no other entry must appear to the right of ALL. For example, entity-ALL is valid but entity-ALL-port is invalid.

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

```
TEST-LED:LT-PF-2000:sysmem:123456::REPEAT=1;

IP 123456
<

      LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR** error responses section. The error responses listed there also apply to this command.

If this command is received with an invalid access identifier, the following error response is returned:

```
      sid date time
M ctag DENY
  IIAC
  /* Input, Invalid Access Identifier */
;
```

If the network element receives this command with an invalid *repeat*, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## TEST-TLM-PAR

**TEST-TLM-PAR:** Test Telemetry Parallel

The privilege level for this command is GENERAL.

The OSI category for this command is FAULT.

This command is available starting in OLS Release 2.1.

## INPUT FORMAT

```
TEST-TLM-PAR:tid::ctag::[mode][,repeat];
```

## DESCRIPTION

The **TEST-TLM-PAR** command provides for general and specific tests of the parallel telemetry and miscellaneous discrete points. The general test turns all parallel telemetry and miscellaneous points on for 20 seconds, then off for 20 seconds, and then reverts to normal operation. The specific test performs similarly, but on one parallel telemetry or miscellaneous discrete point.

The definition of "normal" is the state of the indicator immediately before the test was executed. After the test is executed, "normal" also includes any state changes during the test.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#														
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.														
<i>mode</i>	Mode. This is the mode or the name of the point being tested. Valid values are:  <table><tr><td><b>ALL</b></td><td>The default value is ALL</td></tr><tr><td><b>CRNE</b></td><td>CRITICAL-Near End</td></tr><tr><td><b>MJNE</b></td><td>MaJor-Near End</td></tr><tr><td><b>MNNE</b></td><td>MiNor-Near End</td></tr><tr><td><b>CRFE</b></td><td>CRITICAL-Far End</td></tr><tr><td><b>MJFE</b></td><td>MaJor-Far End</td></tr><tr><td><b>MNFE</b></td><td>MiNor-Far End</td></tr></table>	<b>ALL</b>	The default value is ALL	<b>CRNE</b>	CRITICAL-Near End	<b>MJNE</b>	MaJor-Near End	<b>MNNE</b>	MiNor-Near End	<b>CRFE</b>	CRITICAL-Far End	<b>MJFE</b>	MaJor-Far End	<b>MNFE</b>	MiNor-Far End
<b>ALL</b>	The default value is ALL														
<b>CRNE</b>	CRITICAL-Near End														
<b>MJNE</b>	MaJor-Near End														
<b>MNNE</b>	MiNor-Near End														
<b>CRFE</b>	CRITICAL-Far End														
<b>MJFE</b>	MaJor-Far End														
<b>MNFE</b>	MiNor-Far End														

**CONT1-CONT36** Control Point One through Control Point Thirty-six, inclusive

*repeat* Repeat. This indicates the number of times the test will be repeated. This parameter must be an integer between 1 and 10. If no value is provided for this parameter, 1 is assumed.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

None

## OUTPUT FORMAT

If the network element fully complies with the request, the following normal completion response is returned:

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

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

```
TEST-TLM-PAR:LT-PF-2000::123456::MODE=CRNE,1;

IP 123456
<

LT-PF-2000 93-10-26 16:42:11
M 123456 COMPLD
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR error responses** section. The error responses listed there also apply to this command.

If the network element receives a **TEST-TLM-PAR** command with an invalid *mode*, the following error response is returned:

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

If the network element receives this command with an invalid *repeat*, the following error response is returned:

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

## RELATED TL1 COMMANDS/MESSAGES

None

## UPD-SYS

**UPD-SYS:** Update System

The privilege level for this command is GENERAL.

The OSI category for this command is CONFIGURATION.

This command is available starting in OLS Release 1.0.

## INPUT FORMAT

**UPD-SYS:** *tid::ctag;*

## DESCRIPTION



### CAUTION:

*Execution of this command may affect service on a protected line or slot if the associated circuit packs are missing.*

The UPD-SYS command updates the network element data base to reflect the existing configuration and incoming signals.

## INPUT PARAMETERS

<i>tid</i>	Target identifier. This is the name of the network element to which the command is addressed. It must be a string of 20 or fewer characters from the following set:  [A-Z][a-z][0-9].+-%#
<i>ctag</i>	Correlation tag. This is included in the command and is repeated back by the network element in the response to allow association of the command and response messages. Valid values for <i>ctag</i> are strings of up to 6 characters comprised of identifiers and/or decimal numerals (a string of decimal digits with an optional non-trailing "."). Strings containing both numbers and letters must begin with a letter. A "." is allowed only if all other characters are digits.

## CENTERLINK CIT TEXT

The following text will appear on the CenterLink CIT screen below the input form and above the **EXECUTE** and **CLEAR** buttons:

CAUTION: Executing this command can interrupt service on a protected line or slot if the associated circuit packs are missing.

## OUTPUT FORMAT

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

The network element will return a **COMPLD** whenever it is completed even if the update resulted in no change to the database of the network element.

## OUTPUT PARAMETERS

Refer to the **RTRV-HDR OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to this command.

## EXAMPLE INPUT/OUTPUT

The following example illustrates the command/response associated with an update:

```
upd-sys:LT-PF-2000::123456;  
  
IP 123456  
<  
  
LT-PF-2000 93-10-26 16:42:11  
M 123456 COMPLD  
;
```

## ERROR RESPONSES

Refer to the **RTRV-HDR error responses** section. The error responses listed there also apply to this command.

If the network element receives an **UPD-SYS** command while the **SYSCTL** and **SYSTEMEM** have incompatible software versions, the following error response is returned:

```
sid date time  
M ctag DENY  
SSTP  
/* Status, STopped  
The execution of this command stopped because SYSCTL and SYSTEMEM  
have incompatible software versions.  
*/  
;
```

## RELATED TL1 COMMANDS/MESSAGES

**INIT-SYS**

---

**Optical Line System (OLS)  
Parallel Telemetry**

**4**

---

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---

# Optical Line System (OLS) Parallel Telemetry

# 4

---

## Overview

This section presents information on parallel telemetry interfaces to the operations system (OS). This includes information on provisioning and alarm and status points.

---

## Introduction

The OLS also supports parallel telemetry. The OLS parallel telemetry interface is dependent on the wiring of individual (parallel) leads to the telemetry remote.

Table 4-1 summarizes the OLS parallel telemetry points for SONET.

**Table 4-1. SONET OLS Parallel Telemetry Points**

<b>Point Name</b>	<b>Type (Note)</b>	<b>Point Description</b>
CR-NE	SA	Critical Alarm - Near End
CR-FE	SA	Critical Alarm - Far End
MJ-NE	NSA	Major Alarm - Near End
MJ-FE	NSA	Major Alarm - Far End
MN-NE	NSA	Minor Alarm - Near End
MN-FE	NSA	Minor Alarm - Far End

**Note:** SA = service affecting; NSA = non-service affecting

---

Table 4-2 summarizes the OLS parallel telemetry points for SDH.

**Table 4-2. SDH OLS Parallel Telemetry Points**

<b>Point Name</b>	<b>Type (Note)</b>	<b>Point Description</b>
CR-NE	SA	Critical Alarm - Near End
CR-FE	SA	Critical Alarm - Far End
PROMPT-NE	NSA	Prompt Alarm - Near End
PROMPT-FE	NSA	Prompt Alarm - Far End
DEFER-NE	NSA	Deferred Alarm - Near End
DEFER-FE	NSA	Deferred Alarm - Far End

**Note:** SA = service affecting; NSA = non-service affecting

---

Parallel telemetry wiring to a telemetry remote is only necessary at one end or the other of an Optical Line System point-to-point application, because either OLS end terminal can report the parallel telemetry for the other. The parallel telemetry updates are exchanged using the supervisory signal. Thus, a far-end OLS parallel telemetry alarm and status information is forwarded to the telemetry remote by the near-end OLS.

There are four cases when parallel telemetry updates will not be exchanged between OLSs in a subnetwork:

- a. If the remote activity reporting is disabled
- b. If the supervisory channel fails, or if any of the equipment which carries it fails
- c. If OLSs belong to different alarm groups
- d. Network element Status Comm Failure when AGNE cannot communicate with subordinates

## **Parallel Telemetry Test**

---

The OLS supports parallel telemetry testing via the **TEST-TLM-PAR** command. The parallel telemetry test consists of setting the user-specified parallel telemetry points "on" for 20 seconds and then "off" for 20 seconds. The same test may be repeated up to ten times. The user can include any one point or all points in a test.

---

# Glossary

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## **1A-TX**

1A-Transmit — When the direction parameter of an Optical Line System end terminal is provisioned 1A-TX, the "A" optical lines are used in the transmit direction.

## **1A-RCV**

1A-Receive — When the direction parameter of an Optical Line System end terminal is provisioned 1A-RCV, the "A" optical lines are used in the receive direction.

---

# **A**

## **ABN**

Abnormal — A light emitting diode (LED) on the indicator strip and user panel that is lighted when a temporary condition potentially affecting transmission exists.

## **ACO**

Alarm Cutoff — A push-button switch on the indicator strip and user panel that can be used to retire the active audible office alarm. If another alarmable condition occurs while the ACO is active, the highest level audible alarm is activated. The alarm cutoff function is also available from the CIT and from an operations system.

## **AGNE**

Alarm Gateway Network Element — A network element that receives remote network element status information from other network elements in an alarm group and rebroadcasts the information to all network elements in the alarm group. Using AGNEs makes it unnecessary for each network element in the alarm group to communicate directly with all other network elements in the alarm group.

## **AID**

Access Identifier — A unique identifier used to address circuit pack slots, ports, and tributaries.

## **AIM**

Alarm Indication Message — A maintenance message transmitted downstream in a digital network that shows that an upstream failure has been detected and alarmed by some upstream equipment, if the upstream alarm has not been suppressed.

## **Alarm**

A contact closure to the office alarm grid.

## **Alarm Group**

A group of network elements that share remote alarm information through an alarm gateway network element (AGNE). Also refer to AGNE.

**ANSI**

American National Standards Institute — An organization consisting of producer, consumer, and general interest groups that establishes the procedures by which accredited organizations create and maintain voluntary industry standards in the United States.

**APD**

Avalanche Photodiode — A highly sensitive optical detector.

**AS&C**

Alarm, Status, and Control

**ASCII**

American Standard Code for Information Interchange — A standard 8-bit code used for exchanging information among data processing systems and associated equipment.

**Asynchronous**

Refers to network elements that are not timed from references traceable to a single timing source.

**AUTO**

Automatic — One possible state of a slot, customer maintenance signal (CMS) port, or optical channel. When a CMS port or optical channel is in the automatic state and the presence of a good signal is detected, the port or optical channel is automatically placed in the in-service (IS) state. When a slot is in the automatic state and the presence of a circuit pack is detected, the slot is automatically placed in the equipped (EQ) state.

**Autonomous Indicators**

Autonomous indicators are those indicators that are subject to incoming signal alarm delay. These include office alarm outputs, parallel telemetry outputs, TL1 autonomous messages, the alarm LEDs (CR, MJ, and MN) on the indicator strip/user panel, and the network element status field in the upper left-hand corner of the CIT.

---

**B**

**BCLAN**

Board Controller Local Area Network — The internal local area network that provides communications between the Line Controller circuit pack and board controllers on the circuit packs associated with an optical line.

**BDFB**

Battery Distribution and Fuse Bay

**BER**

Bit Error Rate — The ratio of bits received in error to bits sent.

---

## C

### **CCITT**

International Telephone and Telegraph Consultative Committee — An international advisory committee under United Nations sponsorship that has composed and recommended for adoption worldwide standards for international communications. Recently changed to the International Telecommunications Union (ITU) Telecommunication Standardization Sector (TSS).

### **CDRH**

Center for Devices and Radiological Health

### **CenterLink**

A new software application for OLS Release 2.1 running under the Windows 95 operating system.

### **CEV**

Controlled Environment Vault

### **CIT**

Craft Interface Terminal — A personal computer loaded with CenterLink software that meets Optical Line System minimum requirements.

### **CO**

Central Office — A telephone company building where switching and/or transmission system equipment is located.

### **Condition**

Conditions persist in time and indicate that there is something abnormal about the system.

### **CMS**

See Customer Maintenance Signal.

### **CR**

Critical (alarm)

### **Current Value**

The value currently assigned to a provisionable parameter.

### **Customer Maintenance Signal**

The 155-Mb/s optical signal originating from the customer supplied equipment. It is carried as part of the supervisory signal. Also see "Supervisory Signal."

---

## D

### **Data**

A collection of system parameters and their associated values.

### **dB**

Decibels — A dimensionless unit used to express the ratio between input and output voltages, powers, currents, or sound intensities.

### **DCE**

Data Circuit Equipment — The equipment that provides the signal conversion and coding between the data terminating equipment and the line. The DCE may be separate equipment or a part of the data terminating equipment.

### **DCMS**

Design Change Management System — The Design Change Management System is used to issue product change notifications (PCNs) to customers.

### **DDM-2000 Multiplexers**

Lucent Technologies' SONET-ready network multiplexers that can function as a lightwave terminal. It is designed primarily for loop feeder and interoffice applications that will work in existing asynchronous as well as the emerging SONET networks.

### **Demultiplexing**

A process applied to a multiplexed signal for recovering signals combined within it and for restoring the distinct individual channels of these signals.

### **DFB**

Distributed Feedback

### **Doping**

The addition of impurities in a substance to achieve desired properties.

### **DRAM**

Dynamic Random Access Memory — Semiconductor random-access memory that requires short interval refreshing to retain its contents.

### **Drop Side Signal**

An OC-48 optical signal suitable for transmission over the Optical Line System.

### **DSNE**

Directory Service Network Element — The single reference point in an Optical Line System network. The Directory Service Network Element stores the IDs of the other network elements and updates the other network elements after configuration changes. The Directory Service Network Element is responsible for administering a data base that maps network element names (TIDs) to addresses (NSAPs). Also see NSAP and TID.

### **DTE**

Data Terminating Equipment — The equipment that originates data for transmission and accepts transmitted data.

**DWDM**

Dense Wavelength Division Multiplexing — Allows customers to multiplex up to eight different wavelengths of drop side signals (OC-48 signals from FT-2000 OC-48 Large Capacity Terminals) onto a single fiber.

---

**E**

**ECI**

Equipment Catalog Item

**EDFA**

Erbium Doped Fiber Amplifier — A form of optical amplification in which an optical signal passes through a section of erbium doped fiber and is amplified by a laser pump diode.

**EEPROM**

Electrically Erasable Programmable Read-Only Memory — Readable memory that is nonvolatile in nature, erased electrically, and programmed externally from the processor that uses it.

**EIA**

Electronic Industries Association — A trade association of the electronics industry that establishes electrical and functional standards.

**EMC**

Electromagnetic Compatibility

**EMI**

Electromagnetic Interference — High-energy, electrically induced magnetic fields that cause data corruption in cables passing through the fields.

**End Terminal Site**

The location of the Optical Line System equipment that terminates the optical line signals.

**EPROM**

Erasable Programmable Read-Only Memory — Readable memory that is nonvolatile in nature, erased by exposure to intense ultraviolet light, and programmed externally from the processor that uses it.

**EQ**

Equipped — A memory administrative state for OA and TLM circuit pack slots. EQ refers to an OA or TLM circuit pack slot that is fully monitored and alarmed.

**Erbium**

A soft, rare earth element used in metallurgy and nuclear research.

**ES**

Errored Seconds — A second in which one or more coding violations are detected. Errored seconds are monitored for the optical line.

**ESD**

Electrostatic Discharge — The discharge of static electricity into equipment that potentially causes component damage and logic errors.

**Event**

Events happen at a particular time (do not persist in time).

**Executable Code**

The "program" that controls the operation of the system.

---

**F**

**FDA**

Food and Drug Administration

**FE ACTY**

Far-End Activity — An LED on the indicator strip and user panel that is lighted when an alarm or status condition exists at a remote network element.

**FIT**

Failures in Time — Circuit pack failure rates per  $10^9$  hours as calculated using the method described in TR-TSY-000332, Issue 3, *Reliability Prediction Procedure for Electronic Equipment (RPP)*.

**Flash EPROM**

A new technology that combines the nonvolatility of EPROM with the in-circuit reprogrammability of electrically-erasable PROM (EEPROM).

---

**G**

**Gb/s**

Gigabits ( $10^9$  bits) per second

**GNE**

Gateway Network Element — A network element that serves as a single interface to the local X.25 message-based operations system for all the Optical Line System End Terminals and Repeaters in a network.

---

## H

### **Hardware Ready**

The shelf, connector, and backplane have been designed to accept hardware (circuit packs) that is not available yet. Additional cables may be required.

---

## I

### **I/O**

Input/Output

### **IS**

In-Service — A memory administrative state for CMS ports and optical channels. IS refers to a CMS port or optical channel that is fully monitored and alarmed.

### **ITU**

International Telecommunications Union — An international advisory committee under United Nations sponsorship that has composed and recommended for adoption worldwide standards for international communications. Also refer to CCITT.

---

## K

### **Krypton Line**

A standard laser source and a krypton line at 1.54782  $\mu\text{m}$  are used as the standard for the wavelengths accepted by the Optical Line System. The frequency of the krypton line is 193.68622 Terahertz (THz).

---

## L

### **LAN**

Local Area Network

### **LBC**

Laser Bias Current — A performance-monitoring parameter.

### **LBFC**

Laser Backface Current — A performance-monitoring parameter.

**LBO**

Line Buildout — An equalizer network that guarantees the proper signal level. Also see optical line buildout.

**LCT**

FT-2000 OC-48 Large Capacity Terminal

**LED**

Light-Emitting Diode

**Line**

A bidirectional optical transmission line. In T1/Bellcore terminology, "line" refers to a transmission medium, together with the associated high-speed equipment, required to provide the means of transporting information between two consecutive network elements, one of which originates the line signal and the other terminates the line signal.

**LOF**

Loss of Frame — A failure to synchronize to an incoming signal.

**LOS**

Loss of Signal — The absence of an adequate incoming signal.

---

**M**

**μm**

Micrometer —  $10^{-6}$  meters

**Menu**

A set of possible values for a parameter.

**MJ**

Major (alarm)

**MN**

Minor (alarm)

**MTBF**

Mean Time Between Failures

**MTBMA**

Mean Time Between Maintenance Activities

**Multiplexing**

The process of combining several distinct digital signals into a single composite digital signal.

---

## **N**

### **NCDRH**

National Center for Devices and Radiological Health

### **NE**

Network Element — Refers to an Optical Line System End Terminal or Optical Line System Repeater in a network.

### **NE ACTY**

Near-End Activity — An LED on the indicator strip and user panel that is lighted when an alarm or status condition exists at the local network element.

### **NEBS**

Network Equipment-Building System

### **nm**

Nanometer —  $10^{-9}$  meters

### **NMA**

Network Monitoring and Analysis System — Bellcore's alarm surveillance operations system.

### **NMON**

Not Monitored — A memory administrative state for CMS ports and optical channels. This refers to a CMS port or optical channel that is not monitored and will not transition to the IS state if a good signal is detected.

### **Nonautonomous Indicators**

The nonautonomous indicators are those indicators that are not subject to incoming signal alarm delay. These indicators include the circuit pack FAULT LEDs, all CIT reports, TL1 command response messages, and the LEDs on the indicator strip and user panel (except CR, MJ, and MN).

### **NRZ**

Nonreturn to Zero

### **NSA**

Non-Service Affecting

### **NSAP**

Network Services Access Point — An automatically assigned number (address) that uniquely identifies a network element for the purposes of routing data communications channel messages.

### **Null Modem**

A null modem cable allows a CIT local access to the Optical Line System via the DTE port on the interconnection panel of the End Terminal and Repeater Shelves.

---

## O

### **O&M**

Operation and Maintenance

### **OA**

The Optical Line System Optical Amplifier circuit pack optically amplifies an optical line signal and provides an add/drop function for the supervisory signal.

### **OALAN**

Overhead Access Local Area Network — The internal local area network that provides communications between the System Controller circuit pack and the Overhead Controller - Tributary circuit pack.

### **OAM&P**

Operations, Administration, Maintenance, and Provisioning

### **OC, OC-n**

Optical Carrier — The optical signal that results from an optical conversion of an STS signal; that is, OC-1 from STS-1 and OC-n from STS-n.

### **ODU**

The Optical Line System Optical Demultiplexing Unit provides an interface between an incoming wavelength division multiplexed optical line signal and up to eight outgoing OC-48 drop side signals.

### **OLS**

Optical Line System — See Optical Line System.

### **Operations Interface**

Any interface that provides information on the system behavior or control. These include the equipment LEDs, indicator strip/user panel, CIT, office alarms, and all telemetry interfaces.

### **OMU**

The Optical Line System Optical Multiplexing Unit provides an interface between up to eight incoming OC-48 drop side signals and an outgoing wavelength division multiplexed optical line signal.

### **Operations Interworking**

The capability to access, operate, provision, and administer remote systems through CIT access from any site in a SONET network or from a centralized operations system.

### **Optical Channel**

A single OC-48 signal within the optical line signal. There are eight optical channels (OC-48 signals) within one optical line signal.

### **Optical Line Buildout**

An equalizer network between the Optical Line System and the lightguide cross-connect panel (or equivalent). It guarantees the proper received signal level at the Optical Amplifier circuit pack.

**Optical Line ID**

The part of the supervisory signal that identifies optical lines to prevent misconnections between sites.

**Optical Line Signal**

A wavelength division multiplexed optical signal that consists of up to eight optical channels and one supervisory channel.

**Optical Line System**

The Optical Line System is a flexible, high-capacity, analog lightwave system that transports digitally encoded information contained in up to eight different wavelengths of SONET OC-48 signals (up to 32,256 voice channels each) through standard single-mode or *Truwave*<sup>™</sup> optical fibers.

**Optical Section**

The part of the optical line that exists between adjacent end terminal and repeater sites or between adjacent repeater sites.

**Original Value**

The value given to a CIT provisionable parameter at the factory.

**Original Value Provisioning**

The original values are the values given to CIT provisionable parameters at the factory. At system start-up, the original values are copied and become the current values. These current values can be changed using local or remote provisioning. The original values can never be changed.

**OS**

Operations System — A central computer-based system used to provide operations, administration, and maintenance functions.

**OSI**

Open Systems Interconnection — Referring to the OSI reference model, a logical structure for network operations standardized by the International Standards Organization (ISO).

**Order Wire**

The part of the supervisory signal that is used for communications between sites.

---

**P****Parameter**

A characteristic of the system that affects its operation.

**PC**

Personal Computer

**PCN**

Product Change Notification — Product change notifications are issued to notify customers that in-service product changes are required to correct an existing or potential problem. Product change notifications are issued through the Design Change Management System.

**Platform**

In the Optical Line System, a platform is a family of equipment and software configurations designed to support a particular set of applications.

**PM**

Performance Monitoring — Measures the quality of service and identifies degrading or marginally operating systems (before an alarm would be generated).

**POH**

Path Overhead — Overhead assigned to and transported with the payload until the payload is demultiplexed. It is used for functions that are necessary to transport the payload.

**Preprovisioning**

The capability to provision a slot before installing a circuit pack.

**Proactive Maintenance**

Refers to the process of detecting degraded conditions not severe enough to initiate protection switching or alarming, but indicative of an impending signal fail or signal degrade defect.

**Provisioning**

Assigning a value to a parameter in memory.

**PWR**

Power

---

**R**

**Reactive Maintenance**

Refers to detecting defects/failures and clearing them.

**Repeater Site**

The location of the Optical Line System equipment that optically amplifies the optical line signals.

**Revertive Switching**

In revertive switching, there is a service and protection high-speed line, DCC, etc. When a protection switch occurs, the protection line, DCC, etc., is selected. When the fault clears, service "reverts" back to the original service line. Also see 1x1 Line Protection.

**RF**

Radio Frequency

**RMS**

Root Mean Square

**RPP**

Reliability Prediction Procedure

**RTAC**

Regional Technical Assistance Center — A Lucent Technologies organization that helps customers maintain installed systems.

**RZ**

Return to Zero

---

**S**

**SA**

Service Affecting

**SDH**

Synchronous Digital Hierarchy

**SES**

Severely Errored Seconds — A second in which the coding violations detected reach a fixed threshold. The severely errored seconds are monitored for the supervisory line.

**Single-Ended Operations**

The capability to perform operations, administration, maintenance, and provisioning of remote network elements on a centralized basis.

**Site Address**

The unique address of each end terminal and repeater site in an optical line.

**SLM**

Single Longitudinal Mode

**Software Ready**

The software that runs on the Optical Line System will accept, run, boot, and operate normally when future hardware (circuit packs) is installed.

**SONET**

Synchronous Optical Network — The American National Standards Institute's optical signal standard for broadband transmission.

**Status**

Status means a condition that does not raise an alarm.

**Subnetwork**

A group of interconnected/interrelated network elements.

**Supervisory Channel**

A single 155-Mb/s channel within the optical line signal.

**Supervisory Signal**

An optical signal originating at the Telemetry Controller circuit pack that is used to communicate maintenance information. The supervisory signal consists of the supervisory overhead and the customer maintenance payload. The supervisory signal is wavelength division multiplexed onto the optical line by the Optical Amplifier circuit pack.

**SYSCTL**

The System Controller and System Memory circuit packs provide the highest level of system control for the Optical Line System. The System Controller circuit pack provides overall administrative control of the system.

**SYSTEMEM**

The System Memory and System Controller circuit packs provide the highest level of system control for the Optical Line System. The System Memory circuit pack provides memory support for the SYSCTL circuit pack.

---

**T**

**T1X1 and T1M1**

The ANSI committees responsible for telecommunications standards.

**TA**

Technical Advisory

**TCA**

Threshold-Crossing Alert — A condition set when a counter exceeds a user-selected high or low threshold. A TCA does not generate an alarm but is available on demand through the CIT.

**TEC**

Thermo-Electric Cooler

**THz**

Terahertz —  $10^{12}$  hertz

**TID**

Target Identifier — A provisionable parameter used to identify an Optical Line System network element.

**TL1**

Transaction Language 1 — A machine-to-machine communications language that is a subset of ITU-T's human-machine language.

**TLM**

The Optical Line System Telemetry Controller circuit pack provides a bidirectional interface between an IS-3 customer maintenance signal and the supervisory signal. The TLM circuit pack also performs maintenance functions that are used to monitor the performance of the optical line.

**TOHCTL**

The Optical Line System Overhead Controller - Tributary circuit pack provides user access to the data communications channel (DCC) bytes.

**Tone**

An amplitude-modulated signal in the 5- to 30-kHz range that is superimposed on the drop side signal at the end terminal site.

**TR**

Technical Reference

**TSO**

Technical Support Organization — A Lucent Technologies organization that provides troubleshooting/installation technical support.

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**U**

**UAS**

Unavailable Seconds — A second during which the monitored facility is unavailable. The unavailable seconds are monitored for the supervisory line.

**Upgrade**

An upgrade is the addition of new capabilities (features) to an existing platform. This requires new software and may require new hardware.

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**V**

**Value**

A number, text string, or other menu selection associated with a parameter.

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