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WaveStar® TDM 10G (STM-64)

TL1 Reference Manual

365-371-526
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Issue a
September 2001

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WaveStar® TDM 10G (STM-64), R4.0
TL1 Reference Manual

365-371-526 Issue a Date: September 2001

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About this information product

Purpose

The *WaveStar*® TDM 10G (STM-64), R4.0 *TL1 Reference Manual* serves as a reference for all TL1 commands, which can be used to operate the network element. The manual also gives an introduction to the concept of the TL1 commands and instructs how to use them.

Intended audience

The *WaveStar*® TDM 10G (STM-64), R4.0 *TL1 Reference Manual* is 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.

Reason for reissue

This is the first issue of this document.

Chapter descriptions

This document is divided into the following chapters:

- "Contents" provides an overall document contents.
- "About this information product" provides a brief description about the purpose and what the document contains.
- "Introduction" provides a brief overview of the Operations Systems Interfaces.
- "Operations Communications Interfaces" provides information on the TL1 Interface.
- "TL1 Message Details" provides detailed information on the TL1 Messages.
- "Appendix" provides tables of additional information, e.g. the AID designations used by the WaveStar® TDM 10G (STM-64), R4.0.

- "Glossary" provides specialized terms with brief description.
- "Index" lists the page numbers for locating specific topics, terms, definitions, and concepts in this document.

Related documents

The Lucent Technologies documents listed in this section provide additional information about WaveStar® TDM 10G.

This section briefly describes the documents that are included in the WaveStar® TDM 10G documentation set.

- Installation Manual

  The *WaveStar®* TDM 10G (STM-64), R4.0 *Installation Manual* is a step-by-step guide to system installation and setup. It also includes information needed for pre-installation site planning and post-installation acceptance testing.
- Applications, Planning, and Ordering Guide

  The *WaveStar®* TDM 10G (STM-64), R4.0 *Applications, Planning, and Ordering Guide* (APOG) is for use by network planners, analysts and managers. It is also for use by the Lucent Account Team. It presents a detailed overview of the system, describes its applications, gives planning requirements, engineering rules, ordering information, and technical specifications.
- User Operations Guide

  The *WaveStar®* TDM 10G (STM-64), R4.0 *User Operations Guide* provides step-by-step information for use in daily system operations. The manual demonstrates how to perform system provisioning, operations, and administrative tasks by use of WaveStar® CIT.
- Alarm Messages and Trouble Clearing Guide

  The *WaveStar®* TDM 10G (STM-64), R4.0 *Alarm Messages and Trouble Clearing Guide* gives detailed information on each possible alarm message. Furthermore, it provides procedures for routine maintenance, troubleshooting, diagnostics, and component replacement.
- TL1 Reference Manual

  The *WaveStar®* TDM 10G (STM-64), R4.0 *TL1 Reference Manual* serves as a reference for all TL1 commands, which can be used to operate the network element. The manual also gives an introduction to the concept of the TL1 commands and instructs how to use them.
- WaveStar®SNMS Provisioning Guide (Application WaveStar® TDM 10G (STM-64), R4.0)

  The *WaveStar® SNMS Provisioning Guide (Application WaveStar®* TDM 10G (STM-64), R4.0*)* gives instructions on how to perform system provisioning, operations, and administrative tasks by use of WaveStar® SNMS.

The following table lists the documents included in the WaveStar® TDM 10G documentation set.

Document Number	Title
109149773 (365-371-521)	WaveStar® TDM 10G (STM-64), R4.0 Applications, Planning, and Ordering Guide
109149781 (365-371-522)	WaveStar® TDM 10G (STM-64), R4.0 User Operations Guide
109149799 (365-371-523)	WaveStar® TDM 10G (STM-64), R4.0 Alarm Messages and Trouble Clearing Guide
109149823 (365-371-525)	WaveStar® TDM 10G (STM-64), R4.0 Installation Manual
109149831 (365-371-526)	WaveStar® TDM 10G (STM-64), R4.0 TL1 Reference Manual
109149807 (365-371-524)	WaveStar® SNMS Provisioning Guide (Application WaveStar® TDM 10G (STM-64), R4.0)
109149856	CD-ROM Documentation WaveStar® TDM 10G (STM-64), R4.0 (all manuals on one CD-ROM)

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1 Introduction

Contents

Overview

Purpose

This document provides information on the Lucent Technologies WaveStar® TDM 10G (STM-64), R4.0 operations system (OS) interfaces. It serves as a reference for all TL1 commands, which can be used to operate the network element. The manual also gives an introduction to the concept of the TL1 commands and instructs how to use them.

TL1 Interface

The Transaction Language 1 (TL1) interface communicates alarm, status, and control information to/from the alarm surveillance OS. The TL1 interface is based on Telcordia (formerly known as Bellcore) GR-833-CORE, Issue 2, and GR-199-CORE, Issue 2.

The TL1 interface communicates directly with the OS, not requiring the use of telemetry remote units or mediation devices (MDs).

The TL1 interface also supports performance monitoring (PM) threshold-crossing alerts (TCAs) and retrievals of current and historical PM data.

2 Operations Communications Interfaces

Overview

Purpose This chapter provides a short introduction to the communications between Operations Systems and Network Elements.

Introduction Operations Systems (OSs) need to communicate with Network Elements (NEs) such as WaveStar® TDM 10G (STM-64), R4.0 NEs, for the purposes of sending control information and receiving status and alarm information. OS communication over OSI will occur directly for OS management of an NE (see Figure 2-1).

Additional information For information on STM-64 TL1 commands/messages, refer to Chapter 3, ***WaveStar®*** TDM 10G (STM-64), R4.0 ***TL1 Message Details***.

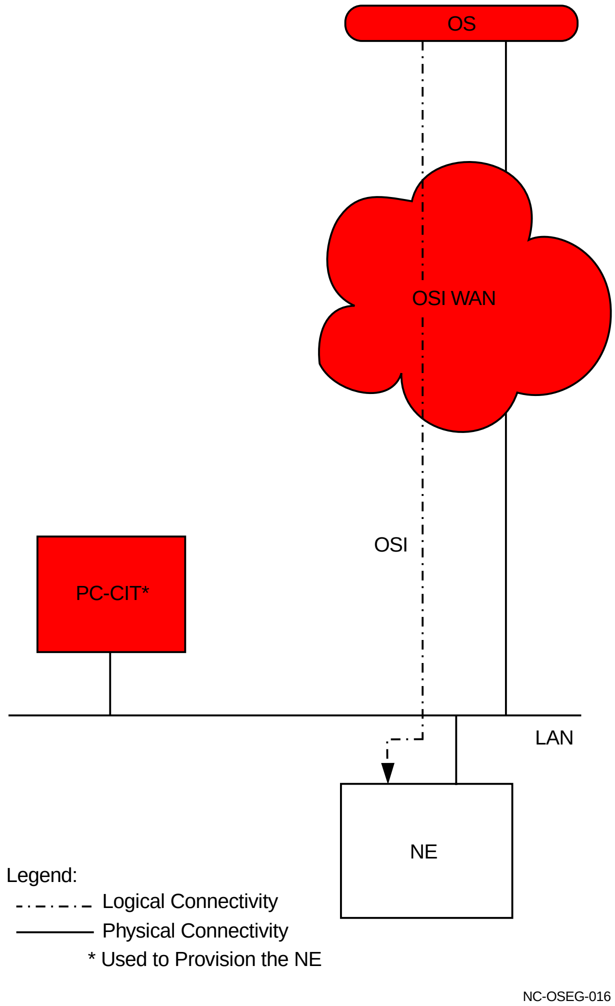
Contents

OS Communication: direct OSI connectivity

OSI WAN/LAN communication between OS and NE

The figure below shows the physical and logical connectivity for OSI WAN/LAN communications between an OS and an NE.

Figure 2-1 OS Communication over OSI directly for OS Management of an NE



☐

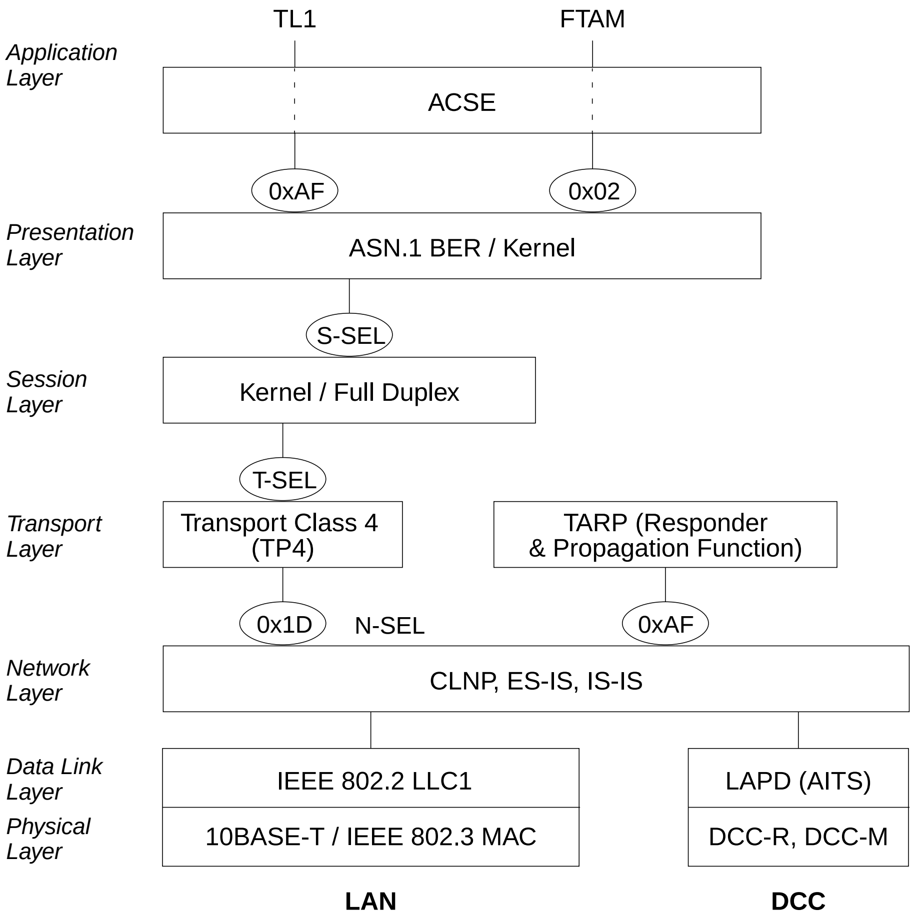
DCN protocol stack

Standard 7-layer OSI stack

WaveStar® TDM 10G (STM-64), R4.0 network elements support the exchange of management information over the standard 7-layer OSI stack over Local Area Networks (LAN) and over Data Communication Channels (DCC) acc. to the Telcordia Technologies (formerly Bellcore) GR-253 standard.

Protocols and services

WaveStar® TDM 10G (STM-64), R4.0 network elements support the protocols and services as shown in the figure below.



LAN interface details

References

The LAN protocol stack shown in Table 2-1 allows the LAN to be the link which carries OSI and IP based communication messages between the applications on the OS and peer applications on NEs, possibly through an NCC.

Table 2-1 OSI LAN Stack References

Layer	Stack Components
Application	ACSE (ISO 8649/8650); FTAM (ISO 8571); DS (ISO 9594/ANSI T1.245); TARP (Telcordia GR-253-CORE); ROSE (ISO 13712-3)
Presentation	Kernel CO-Service (ISO 8822/8823); ASN.1 (ISO 8824); BER (ISO 8825)
Session	BCS Kernel/Full Duplex (ISO 8326/ 8327-AD2)
Transport	TP4 (ISO 8073);
Network	CLNP (ISO 8473); ES-IS (ISO 9542); IS-IS (ISO 10589)
Data Link- Logical Link Control	LLC1 (ISO 8802-2)
Data Link- Media Access Control	CSMA/CD (ISO 8802-3)
Physical	10BASE-T (ISO 8802-3)

OSI DCC interface details

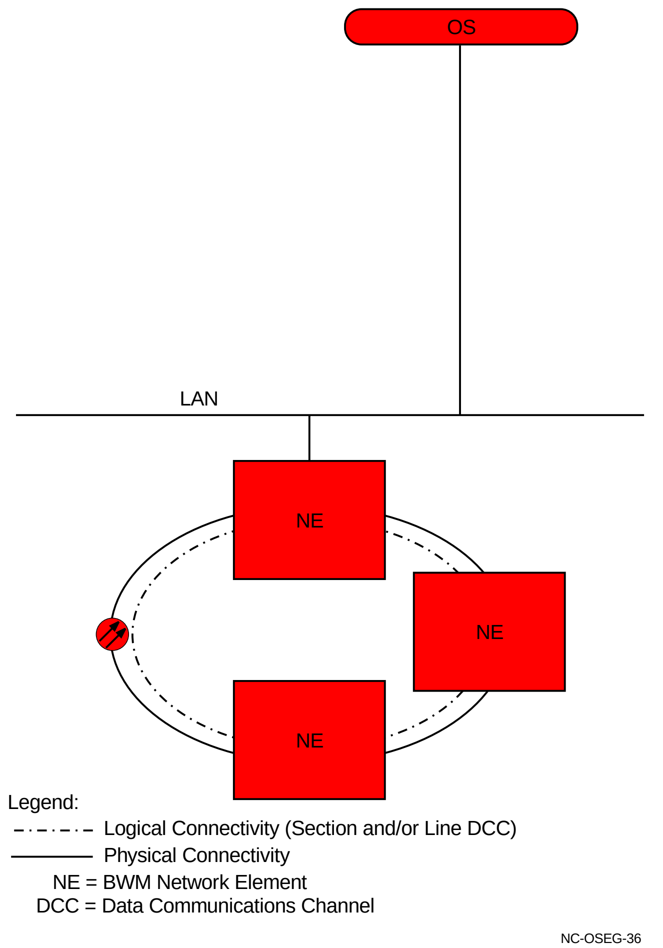
SONET operations communications via DCC

SONET operations communications architectures vary by application and therefore, are dependent upon network topology and NE configurations. As far as the WaveStar® TDM 10G (STM-64), R4.0 NE is concerned, the SONET operations communications over the OS to NE communications interface will generally involve a LAN. However, SONET operations communications over an NE to NE interface uses a Data Communications Channel (DCC). (See Figure 2-2.)

DCC communications interfaces

The following figure shows the two types of DCC communications interfaces of a WaveStar® TDM 10G (STM-64), R4.0 NE.

Figure 2-2 OS to NE Communications Over LAN and NE to NE Communications Over DCC



Two types of DCCs

There are two types of DCCs:

- Section
- Line

Both types of DCCs are embedded communications channels in the SONET optical transport architecture. These channels are solely defined by the overhead bytes of the ***first STS-1*** of an STS-N frame, see Table 2-2. The corresponding byte locations in the remaining 2nd through Nth STS-1s in the STS-N are ignored.

SDH terminology

In SDH terminology:

- Section DCC is referred to as Regenerator Section, or DCC-R; and
- Line DCC is referred to as Multiplexer section, or DCC-M.

SONET STS-1 frame

Table 2-2 shows the locations of the section and line overhead bytes in the overhead section of a SONET STS-1 frame (9 rows by 90-columns). In this frame the Section DCC comprises three Section Data Com bytes (designated D1, D2, and D3) in the Section Overhead. The Section DCC can be between either: a terminal network element and a regenerator or two regenerators.

The Line DCC is comprised of the nine Line Data Com bytes (designated D4 through D12) in the Line Overhead. The Line DCC can be between two consecutive Line Terminating NEs (typically multiplexers).

Table 2-2 Data Com Overhead Byte Layout in SONET STS-1 Frame

	Columns				
Rows	**1**	**2**	**3**	**4**	**5 . . . . 90**
1	Section	*Overhead*			
2					
3	Data Com D1	Data Com D2	Data Com D3		
4	Line	*Overhead*			
5				*Path*	
6	Data Com D4	Data Com D5	Data Com D6	Overhead	
7	Data Com D7	Data Com D8	Data Com D9		Payload
8	Data Com D10	Data Com D11	Data Com D12		
9					

DCC line rates

The table below describes the line rates for the two different DCCs. The combined line rate of both DCC channels is 768 kilobits/second. The STS-N frame time is 125 microseconds with only one STS-1 being considered per STS-N frame.

Table 2-3 Section and Line DCC Line Rates

DCC Type	Line Rate
Section DCC	192 kilobits/second (3 bytes × 8 bits/byte / 125 microseconds)
Line DCC	576 kilobits/second (9 bytes × 8 bits/byte / 125 microseconds)

Communications protocols used on the line DCC

The standard Telcordia document, GR-253-CORE does not specify the protocol stack to be used over the Line DCC. However, the ANSI T1.105.04 standard specifies that the OSI stack described for the Section DCC (see Table 2-4) may also be used over the Line DCC.

Section DCC stack references

GR-253-CORE specifies the use of the OSI protocol stack for the Section DCC shown in the table below.

Table 2-4 OSI Section DCC Stack References

Layer	Stack Components
Application	ACSE (ISO 8649/8650); FTAM (ISO 8571); DS (ISO 9594/ANSI T1.245); TARP (Telcordia GR-253-CORE); ROSE (ISO 13712-3)
Presentation	Kernel CO-Service (ISO 8822/8823); ASN.1 (ISO 8824); BER (ISO 8825)
Session	BCS Kernel/Full Duplex (ISO 8326/8327-AD2)
Transport	TP4 (ISO 8073)
Network	CLNP (ISO 8473); ES-IS (ISO 9542); IS-IS (ISO 10589)
Data Link	LAPD (ITU-T Q.920/921); LinkID (Lucent-Proprietary)
Physical	DCC (GR-828-CORE)

DCC Protection Mode

Introduction

A user can provision the DCC Protection Mode of a WaveStar® TDM 10G (STM-64), R4.0 NE in a SONET network environment. The value of the DCC Protection Mode parameter determines if a DCC is protected or unprotected.

DCC protection mode parameter table

Table 2-5 lists the values of the DCC Protection Mode user-provisionable parameter values.

Table 2-5 DCC Protection Mode User-Provisionable Parameter

Parameter	Allowed Values
DCC Protection Mode	DCC_Unprotected (default value) DCC_Protected

DCC protection modes and protection types

DCCs can have several protection types. When the Protection Mode parameter value of a DCC is DCC_Unprotected (unprotected), the DCC protection type is 0x1. However, if the protection mode of a DCC is protected, only the 1+1 linear, unidirectional, and non-revertive protection type is currently supported.

DCC protection types and port protection groups

The protection type of a DCC within an port protection group (PPG) is by default 0x1. When the user provisions the DCC Protection Mode parameter value to DCC_Protected, the 0x1 default protection type changes to 1+1 linear, unidirectional, and non-revertive.

DCC port setup

When a circuit pack is inserted into a slot, the DCC on a port is left in the disabled state. The user has to explicitly enable the DCC on a port.

Definition of a 1+1 port protection group (PPG)

Creation of a 1+1 linear, unidirectional, and non-revertive DCC protection type within a port protection group (1+1 PPG) does not automatically activate the 1+1 DCC Protection Type. Both DCC ports must be enabled before the 1+1 DCC Protection Type can be activated. When the user deletes a 1+1 PPG, or changes the DCC Protection Mode from protected to unprotected, the DCCs become unprotected (0x1).

Results ofeEnabling DCCs

If a port is unprotected and DCCs are enabled on both ports, then the DCC protection type is 0x1.

If a port is part of a protection group and the DCC Protection Mode is protected, then upon enabling DCCs on both ports, the DCC protection type is 1+1 linear, unidirectional, and non-revertive.

Results of disabling DCCs

If the DCC on a port in a 1+1 PPG is disabled, the NE performs the following actions:

1. Disables the DCC on the other port,
2. Changes the Protection Mode parameter value to DCC_Unprotected, and
3. Notifies the user of the change in state to the default Protection Mode parameter value.

Related TL1 commands

TL1 commands which support the DCC Protection Mode include:

- ED-PROTN-GRP
- ENT-PROTN-GRP
- RTRV-PROTN-GRP
- RTRV-PROTN-LST
- RTRV-FECOM

OSI Technical Specifications

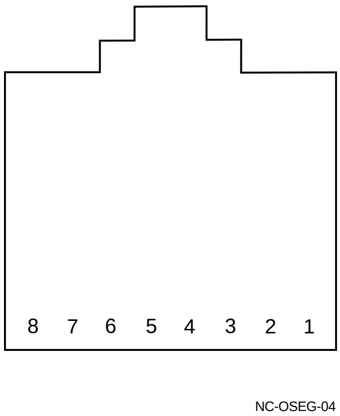
Introduction

The tables in this section describe the operating values of the parameters needed for the protocols described in OSI LAN stack references (Table 2-1) and OSI Section DCC stack references (Table 2-4).

LAN RJ45 connector

A standard RJ45 (ISO8877) connector is used by the WaveStar® TDM 10G (STM-64), R4.0 to connect to the LAN.

Figure 2-3 RJ45 Connector



LAN RJ45 connector table

For signal descriptions assigned to the pins see Table 2-6.

Table 2-6 RJ45 Pin Configuration

Pin	Signal Description
1	TD+ (out)
2	TD- (out)
3	RD+ (in)
4	n.u.
5	n.u.
6	RD- (in)
7	n.u.
8	n.u.

LAN physical and MAC layer technical specifications table

The parameters in Table 2-7 are non-provisionable.

Table 2-7 Physical and MAC Layer (ISO 8802-3) Attribute Values

Parameter	Operating Value
Medium	10BASE-T
Maximum Frame Size	1518 octets
Minimum Frame Size	64 octets
Address Size	6 octets
Padding	up to 64
Jam Size	32 ones
Backoff Limit	Random
Tx Attempt	15
Inter Frame Gap	9.6 microseconds
Slot Time	512 bit times
MA-UNITDATA Request/Indication	Yes
MA-UNITDATA-STATUS Indication	No

LAN logical link control specifications table

The parameters in Table 2-8 are non-provisionable.

Table 2-8 Logical Link Control Layer (ISO 8802-2) Attribute Values

Parameter	Operating Value
LLC Operation Type	Type 1
LLC Class Type	Class 1
C/R bit	0,1
P/F bit	0,1
UI PDU	Command only
XID PDU	Command or Response
Test PDU	Command or Response
LLC SAP	FE hex
DL-UNITDATA Request/Indication	Yes

LAN status provisionable parameter table

Table 2-9 represents the LAN Status parameter that is user-provisionable.

Table 2-9 LAN Status User-Provisionable Parameter

Parameter	Allowed Values
LAN Status - External LAN	Enabled (default value) Disabled

DCC - LAPD specifications table

Table 2-10 shows the LAPD non-provisionable parameters.

Table 2-10 DataLink Layer: LAPD (ITU-T Q.920/921) Attribute Values

Parameter	Operating Value
T200 timer	1s
N200	3
N201	512
k	7

DCC - LinkID specifications table

Table 2-11 shows the LinkID Protocol non-provisionable parameters.

Table 2-11 LinkID Protocol (Lucent-Proprietary)

Parameter	Operating Value
SAPI	61
TEI	0

CLNP network layer specifications table

The parameters in Table 2-12 are non-provisionable. This table represents the values held by the attributes of the CLNP protocol engine.

Table 2-12 Network Layer: CLNP (ISO 8473) Attribute Values

Parameter	Operating Value
Category 1 Functions*	Supported
Category 2 Functions†	Not supported
Category 3 Functions‡	Not supported**
PDU Lifetime	255 hops††
Segmenting Reassembly queue length	50
NSDU-SNDATA mapping	always 1-1
NSAP length	20 octets‡‡
N-SEL for NET (Network Entity Title)	00 hex
N-SEL for SDH TP4	01 hex
N-SEL for SONET TP4	1D hex
CLNP echo	Request/Response
E/R Flag	Yes (default = off)

* PDU Comp./Decomp., Header Format Analysis, PDU Lifetime Control, Route/Forward/Segment/Reassemble/Discard PDU, Error Reporting and Header Error Detection functions.

† Security, Complete Source Routing and Complete Route Recording Functions.

‡ Partial Source Routing, Partial Route Recording, Priority, QoS Maintenance, Congestion Notification and Padding Functions.

** Except for QoS Maintenance and Padding functions, which are supported for forwarding only.

†† hop = 0.5s; 127 hops if CLNP PDU is transporting a TARP PDU.

‡‡ ISO DCC syntax - Note: In addition to operating in a SONET environment, WaveStar® TDM 10G (STM-64), R4.0 can also route SDH management traffic (with variable NSAP lengths). However, WaveStar® TDM 10G (STM-64), R4.0 is managed as a SONET entity.

EI-IS network layer specifications table

The parameters in Table 2-13 are non-provisionable. This table represents the values held by the attributes of the ES-IS protocol engine.

Table 2-13 Network Layer: ES-IS (ISO 9542) Attribute Values

Parameter	Operating Value
ES Holding Timer (ESHT)	$2 \times$ ESCT + 1
IS Holding Timer (ISHT)	$2 \times$ ISCT + 1
IIH Timer	10s
Holding Multiplier	3
Send ES Hellos	No

IS-IS network layer specifications table

The parameters in Table 2-14 are non-provisionable. This table represents the values held by the attributes of the IS-IS protocol engine.

Table 2-14 Network Layer: IS-IS (ISO 10589) Attribute Values

Parameter	Operating Value
Maximum Adjacencies/subnet	50 for LAN, 1 for point-to-point
NSAP format	20 octets (ISO DCC syntax)
IIH Timer for non-Designated Router	10s
IIH Timer for Designated Router	3s
Holding Multiplier	3
Maximum LSP generation interval time	900s
Minimum LSP generation interval time	30s
Minimum LSP transmission interval time	5s
Maximum LSP length	512 octets (restricted by the maximum LSP length on DCC connections)
Maximum Age	1200s
Zero Age Lifetime	60s
CSNP interval timer	10s
PSNP Interval timer	2s
Waiting Time timer	60s
Routing metric	Default
Maximum Path metric	1023
Maximum Path splits	1
Maximum Least cost paths	1
Adjacency Alarms	Not supported
SPF hold off timer	5s
Reachable Address Prefix for Interdomain routing	Not supported

Network layer provisionable parameters table

Table 2-15 represents the parameters of the network layer (CLNP, ES_IS, IS-IS) that are user-provisionable.

Table 2-15 Network Layer User-Provisionable Parameters

Parameter	Range	Default Value	Incre-ment
NSAP-DFI	1 octet	80 hex	1
NSAP-ORG	3 octets	000000 hex	1
NSAP-RES	2 octets	0000 hex	1
NSAP-RD	2 octets	0000 hex	1
NSAP-AREA	2 octets	0000 hex	1
NSAP-N-SEL	1 octet	00 hex	1
LAN Designated Router (L1/2) Priority	1 - 127	64	1
Maximum Link Metric (MLM)	1 - 255	14	1
LAN Link metric - External LAN	1 - MLM	14	1
ESCT timer	10 - 1000s	10s	10s
ISCT timer	10 - 1000s	10s	10s
IS L2 Routing	Enabled, Disabled	Disabled	Not Applic.

TP4 Transport Layer Specifications Table

Table 2-16 represents the non-provisionable values held by the attributes of the TP4 protocol engine.

Table 2-16 Transport Layer: TP4 (ISO 8073) Attribute Values

Parameter	Default Value
W (Window Time)	16s
N (maximum retransmissions)	6
T1 (Local Retransmission Time)	2s
A_L (Local Acknowledgment Time)	1s
I (Inactivity Time) Formula W*2+N	(16 * 2) + 6 = 38
T-SEL (for ISO Session Layer)	5454 hex
Credit window size	5
Use of Checksum	Not supported
Use of Extended Data TPDU numbering format	Not supported
Use of Selective Acknowledgment	Not supported
Use of Request Acknowledgment	Not supported
TL4 Sever Bit for disconnect on unsuccessful connect request	Yes
Delay Acknowledgment policy	Not supported
Maximum TPDU size	1024
CLTP echo	Not supported
Concatenation	Not supported
QoS	0
Sending queue size	10
TIDU size	2636 octets
Diagnostics T-SEL	Twtr
Adaptive Roundtrip Timer	Yes
Expedited Data Transfer (network expedited) service	Not supported

Session layer specifications table

The parameters in Table 2-17 are non-provisionable. This table represents the characteristics of the session layer. The Basic Combined Subset and Kernel/Full Duplex are subset options of the session layer standard.

Table 2-17 Session Layer (ISO 8327) Attribute Values

Parameter	Operating Value
Protocol Version	2
S-SEL (for ISO Presentation layer)	5353 hex
Maximum size of SS-user-data	10240 octets

Presentation layer specifications table

The parameters in Table 2-18 are non-provisionable. This table represents the values held by the attributes of the presentation layer.

Table 2-18 Presentation Layer Attribute Values

Parameter	Operating Value
P-SEL for FTAM	02 hex
P-SEL for TL1	AF hex
P-SEL for DUA	FD hex
P-SEL for DSA	04 hex
P-SEL for RRP	FC hex

Application layer specifications table

Table 2-19 represents the parameter of the TARP application that is user-provisionable.

Table 2-19 TARP User-Provisionable Parameters

Parameter	Allowed Values
TARP LAN Storm Suppression Feature - External LAN	Disabled (default value) Enabled

☐

3 TL1 Message Details

Contents

Overview

Background

TL1 (transaction language #1) is an ASCII based command language based on MML (huMan Machine Language). It was invented by Bellcore in 1984 after the Bell System divestiture to be a common language for Operations Systems (OS) interfaces.

Purpose

This section provides a general description of the structure of the TL1 messages, the used parameters and the syntax and detailed information for both directions, input and output of the NE.

Supported message types

Autonomous messages (notifications generated by the network element and displayed at the OS) and request/response messages (generated in response to a command input by the OS operator) are supported.

Command descriptions

TL1 command entries which are to be 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. Items enclosed in brackets "[ ]" indicate optional parameters.

User authorization level

Six user authorization levels (0..5) for each function category, based upon login ID, are provided to control which Network Element functions a particular user may perform. Users may execute any commands on their authorization level for this function category, as well as all commands at levels lower than theirs.

The following functional categories are used:

- M (Maintenance)
- S (System administration)
- P (Provisioning)
- PM (Performance monitoring)
- T (Test access)

Each user can have an authorisation level from 0 to 5 for each functional category which grants this user a refering permission except for the security functional category, which supports authorization levels of 1 to 5.

The user authoriization levels are described as follows:

<functional category><authorisation level>

Example: S4

If an authorization level is set to 0, the user has no privileges for that functional category. An authorization level of 1 allows the minimum level of privileges and a level of 5 allows all privileges for the functional category. An user with authorization level 4 in Security Management function category (S4), may execute commands listed in levels 4, 3, 2, and 1 in the Security Management function category.

TL1 Message privilege level summary

The following table lists the authorization level of each TL1 message.

TL1 Message	Privilege
ACT-USER	S1
ALW-ALM	M3
ALW-MSG	M3
APPLY	S4
CANC-USER	S1
CANC-USER-SECU	S5
CVNT-CCT	P3
CPY-MEM	S4
DLT-ASAP-PROF	M3
DLT-CRS	P3
DLT-EQPT	P3
DLT-PROTN-GRP	M4
DLT-ULSDCC-L4	S3
DLT-USER-SECU	S5
ED-ASAP-PROF	M3
ED-CRS	P3
ED-DAT	S4
ED-EPORT	P3
ED-EQPT	P3
ED-NE-SECU	S4
ED-PID	S1
ED-PROTN-ACC	M4
ED-PROTN-GRP	M4
ED-PROTN-TYPE	M4
ED-rr	P3
ED-STATE-EQPT	M4
ED-TCA-PROF	PM3
ED-USER	S1

TL1 Message	Privilege
ED-USER-SECU	S5
ED-VCG	P3
ED-VCG-TRIB	P3
ENT-ASAP-PROF	M3
ENT-CRS	P3
ENT-EQPT	P3
ENT-FECOM	S3
ENT-FECOM-LAN	S4
ENT-PROTN-GRP	M4
ENT-ROLL	P3
ENT-TCA-PROF	PM3
ENT-ULSDCC-L3	S4
ENT-ULSDCC-L4	S4
ENT-ULSDCC-L5	S4
ENT-USER-SECU	S5
INH-ALM	M3
INH-MSG	M3
INIT-EQPT	S4
INIT-REG	PM3
INIT-SYS	S4
OPR-EXT-CONT	M3
OPR-LPBK	T4
OPR-PROTNSW	M4
OPR-RST-LASER	S4
OPR-SYNCNSW	M4
REPT-ALM	
REPT-ALM-ENV	
REPT-DBCHG	
REPT-EVT	
REPT-SW	
RLS-EXT-CONT	M3
RLS-LPBK	T4

TL1 Message	Privilege
RLS-PROTNSW	M4
RLS-SYNCNSW	M4
RTRV-ALM	M1
RTRV-ALM-ENV	M1
RTRV-ASAP-ASGNMT	M1
RTRV-ASAP-PROF	M1
RTRV-ATTR-ALM	M1
RTRV-ATTR-CONT	M1
RTRV-ATTR-ENV	M1
RTRV-COND	M1
RTRV-CRS	P1
RTRV-EPM	PM1
RTRV-EPORT	P1
RTRV-EQPT	P1
RTRV-EXT-CONT	M1
RTRV-FECOM	M1
RTRV-FECOM-LAN	S1
RTRV-FLT-STATE	M1
RTRV-FLT-ISLT	M1
RTRV-HDR	S1,T1,M1,P1,PM1
RTRV-LOG-ALM	S1
RTRV-LOG-NTFCN	S1
RTRV-LOG-PROTNSW	S1
RTRV-LOG-SECU	S5
RTRV-LOG-USER	S1
RTRV-LPBK	T1
RTRV-MAP-NEIGHBOR	S1
RTRV-MAP-NETWORK	S1
RTRV-MAP-RING	M1
RTRV-MNTC	P1
RTRV-NE-SECU	S1
RTRV-OW	M1

TL1 Message	Privilege
RTRV-PM	PM1
RTRV-PMUAT	PM2
RTRV-PRMTR-DATA	S1
RTRV-PRMTR-SFTWR	S1
RTRV-PROTN-ACC	M1
RTRV-PROTN-GRP	M1
RTRV-PROTN-LST	M1
RTRV-PROTN-PPG	M1
RTRV-PROTN-TYPE	M1
RTRV-rr	P1
RTRV-STATE-EQPT	M1
RTRV-SYNCN	P1
RTRV-TCA-ASSGNMT	PM1
RTRV-TCA-PROF	PM1
RTRV-ULSDCC-L3	S1
RTRV-ULSDCC-L4	S1
RTRV-ULSDCC-L5	S1
RTRV-USER-SECU	S4
RTRV-USER	S2
RTRV-VCG	P1
RTRV-VCGTRIB	P1
RTRV-VLAN	S1
SET-ATTR-ALM	M3
SET-ATTR-CONT	M3
SET-OW	M3
SET-SID	S4
SET-SYNCN	P3
TEST-ALM	M3
TEST-LED	M3

□

TL1 Command Input

Input Format

Input format definition

TL1 commands sent to the operations system have the following format:

```
verb-modifier1[-modifier2]:[tid]:[aid]:[ctag]:[general block*]:[common block]:[spec block]:[state block];
```

Input format example

The input format for the `ENT-PLN` command is e.g.:

```
ED-PROTN-GRP:LT-WBM:1-1-o11:123456::1+1:wtr=8;
```

Example	Input format parameters	Input parameter blocks
ENT	Verb	Command code
EQPT	Modifier1	
GRP	Modifier2	
LT-WBM	TID	Staging parameter block
1-1-o11	AID (optional)	
123456	CTAG	
(Not used in the ED-PROTN-GRP command)	RID (optional)	Message payload block(s)
1+1	Spec block (optional)	
wtr=8		

The semi-colon character “;“ terminates a TL1 input message.
Blocks are separated by “:“. Trailing “::” may be omitted.

□

* The general block position is not used in the operations system. Therefore in this position two block-separating colons always follow directly after each other.

Parameters

Command code

`verb-modifier1[-modifier2]` is the command code.

The command code determines the action to be taken by the system as a result of receiving the input message. The command code consists of up to three fields, each separated by a hyphen “–“.

The field with [ ] means an optional field.

All allowed combinations can be found in *"TL1 Message privilege level summary" (3-6)*.

Staging parameter block

The staging parameter block determines the target element and the identity of the object to be acted upon by the input message, followed by a correlation tag. All three parts have to be separated by “:”.

Target identifier (TID)

The first staging parameter block is the target identifier (TID). The target ID is the ***name of the NE*** to which the command is addressed (e.g. LT-WBM).

The TID input parameter has the following characteristics:

- The TID must be the same value as the system identifier (SID) code assigned to the *operations system*. The TID/SID value is normally provisioned during system turn-up.
- The TID/SID is optional, and the *operations system* accepts an input command without a TID. If the TID is not given, and its value is either different from the operations system SID string or syntactically incorrect, the system will use the operations system SID value as part of the error response.
- The TID/SID can have up to 20 alphanumeric characters, including the “-“ character. Before and after the “-” character there has to be a letter.
- The TID/SID is case-sensitive.
- The TID is mandatory.

Access identifier (AID); optional

The second staging parameter block is the access identifier (AID) for addressing the *NE* ***components***. This parameter identifies the entity within the system to be acted upon by the input message (e.g. logical line or logical E1 which is being provisioned, e.g. 1). AIDs are required for most TL1 commands and they must be valid for the NE.

For some TL1 commands in the security management and system administration functional category, the user identifier (UID) is used instead of the AID.

- AID is lower case; however, if the user identifier is used as AID, then it is case-sensitive.
- If AID is not used, the empty field is marked by "::".

Correlation tag (CTAG)

The third staging parameter block is the correlation tag (CTAG). This field is used to associate the command message to the corresponding response message.

The CTAG input parameter has the following characteristics:

- The CTAG can have up to 6 alphanumeric characters and must start with a letter or must be decimal numbered.
- The CTAG is case-sensitive.
- The CTAG is mandatory.

General block

The general block position is not used in the ***operations system***. It is displayed or to be entered as an empty field which implies that the preceding and following colon are written together.

Message payload block(s)

The message payload block(s) is (are) the subject matter relating to the action to be performed by the input message. Some input messages, such as data retrievals, may have no explicit payload. All these blocks are separated by ":".

Common block (optional)

The first optional message payload block is the common block.

The common block is used as a ***position-defined*** COMMON parameter block. This means each parameter is positionally dependent on other parameter(s) in the same block. The parameters in this block are separated by commas.

Spec block (optional)

The second optional message payload block is the spec block.

The spec block is used as a ***name-defined*** SPECIFIC DATA parameter block. This means each parameter has to be specified as
`<parametername>=<parametervalue>`
(e.g. `swsize=1152`).
The parameters in this block are separated by commas and each parameter is positionally independent of other parameter(s) in the same block.

State block (optional)

The third optional message payload block is the state block.

The state block is used as a ***position-defined*** STATE parameter block. This means each parameter is positionally dependent on other parameter(s) in the same block. The parameters in this block are separated by commas. The comma is even necessary when an optional parameter is not given.

Syntax

Colon, commas

A parameter block always follows a colon and contains a (possibly empty) list of parameters, separated by commas. In TL1, trailing colon (:) block separators may be omitted if there are no parameters entered in those last blocks.

Example:

```
RTRV-ATTR-ALM;
```

Since the TID and CTAG are optional parameters (for STM64 they are mandatory), the command name followed by the required semicolon is an acceptable input format.

Semicolon terminator

The semicolon must be sent with the input command to indicate the end of a complete TL1 input message.

If the semicolon...	then the NE...
is not received as part of the input TL1 command from the operations system	cannot determine the end of the input message
is received, but an error is detected	sends a rejection message to the operations system
is received and no error is detected	executes the command

Brackets

Parameters between brackets "[]" are optional.

Input parameter default values

The input parameter default value is defined as the initial value a parameter had during system initialization; in other words, the original value of a parameter.

□

Input Acknowledgment

Definition

An input acknowledgment is a very short output response from the NE for an input command. If an output response cannot be transmitted within 2 seconds after a complete input command is executed, the NE will first send an input acknowledgment before sending an output response. The 2-second counter starts when the NE starts to execute the command, not when the complete TL1 input command is received.

Input acknowledgment format

An input acknowledgment has the following format:

```
IP CTAG <cr><lf>
<
```

This is how the user's screen display would look with the command input format and the input acknowledgment.

Input acknowledgment example

```
RTRV-EQPT:LT-WBM:system:123456;

IP 123456
<
```

Example	Input acknowledgment format
RTRV-EQPT:LT-WBM:123456;	Input command
IP	Acknowledgment code
123456	CTAG
	new line
<	Acknowledgment terminator

□

Input Acknowledgment Parameters

Input acknowledgment code in-progress (IP)

The NE supports the in-progress (IP) acknowledgment code.

This code means that the input request has been initiated and an output message will follow. If the system resource is available but the output response cannot be sent within 2 seconds after the NE has started to execute the input command, one IP acknowledgment is sent indicating that the system will send an output response shortly.

Correlation tag

This is the correlation tag (CTAG) of the input TL1 command to which the acknowledgment refers.

End of acknowledgment

The input acknowledgment is ended with a carriage return <cr> and a line feed <lf>.

Acknowledgment terminator

The less than “<” character is the input acknowledgment terminator.

□

TL1 Command Output

Overview

Definition

A TL1 output response is a message sent from the operations system in response to an input TL1 command.

Types of output responses

The types of output messages sent from the NE are the following:

- Normal response
- Error response.

General format

An output response message consists of one or more segments. Each segment includes a header line, followed by a primary line, and then followed by one or more optional secondary lines. The ">" character is used to terminate all but the last segment of a multisegment output message while the ";" character is used to terminate the last message segment.

All alphabetic characters in the TL1 command responses and autonomous messages are output in uppercase except parameter values, 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.

Long output responses

A very long output message (the length of the message is unlimited) is sent in multiple segments, and each segment is not more than 4096 characters, per specifications in TR-NWT-000831. Each intermediate segment is terminated by a greater than sign ">" and the last segment of a multisegment output message is terminated by the semicolon ";". All segments use the same CTAG value that is equal to the CTAG value of the corresponding input TL1 command.

□

Normal response

Definition

A normal response is returned when an input command is executed successfully.

Normal response format

The normal response is displayed in the following format:

Format	Display position
<cr><lf><lf>	blank line
SID YY-MM-DD HH:MM:SS<cr><lf>	header line
M ctag COMPLD<cr><lf>	primary line
"optional quoted line"<cr><lf>	secondary/quoted line, and/or
/*optional comment line*/ <cr><lf>	secondary/comment line, and/or
....	more secondary lines
;	terminator

Normal response parameters

The format parameters are explained in the following table:

Parameter	Explanation
<cr><lf>	carriage return and line feed
SID	system identifier of the *operational* system
YY-MM-DD	year-month-day Note: 70 ≤ yy ≤ 99 maps to 1970 through 1999 00 ≤ yy ≤ 37 maps to 2000 through 2037 38 ≤ yy ≤ 69 are invalid values
HH:MM:SS	hour:minute:second
M	indicates an output response
CTAG	correlation tag of the input TL1 command to which the response refers
COMPLD	completion code indicating successful execution of input request

`quoted line`	preceded and followed by double quote (" "). A pair of double quotes is used to delimit an expression that can be parsed. The format for the quoted line should follow the TL1 message output format defined in Bellcore's TL1 messages. If the output format is not defined in Bellcore's document, the general "aid:common block:specific block:state block" output format is used, using the general guidelines specified in Bellcore TR-NWT-000831.
`comment line`	preceded by "/*" and ended by "*/ ". The pair of characters "/* and */ " is used to delimit free format text.
`<terminator>`	The ";" character is used for normal termination. The ">" character means that more segments associated with this response message will follow under another header.

Normal response examples

This is one user screen example of a complete execution of a command, showing the command input, input acknowledgment, and a normal response:

```
RTRV-EQPT:LT-WBM:system:123456;

IP ctag123456
<

LT-WBM 98-01-01 08:01:11
M 123456 COMPLD
"system:syspn=def,swsize=1152"
;
```

This is another example of a complete execution of a command, displaying the command input, input acknowledgment, and a normal response:

```
DLT-EQPT:LT-WBM:1-2:123465;

IP 123465
<

LT-WBM 98-01-01 08:00:00
M 123465 COMPLD
;
```

□

Error response

Definition

An error response is returned when an input TL1 command cannot be executed at all due to system problems and/or errors in the input TL1 command.

Error response format

An error response is displayed in the following format:

Format	Display position
`<cr><lf><lf>`	blank line
`SID YY-MM-DD HH:MM:SS<cr><lf>`	header line
`M ctag DENY<cr><lf>`	primary line
`ERCD<cr><lf>`	secondary/unquoted line
`/* 4-character error code explanatory text <cr><lf>`	secondary/comment line
`more line(s) for error message specifics <cr><lf>`	more optional comment lines
`last line for error message specifics */<cr><lf>`	more optional comment lines
`;`	terminator

Error response parameters

The format parameters are explained in the following table:

Parameter	Explanation
`<cr><lf>`	carriage return and line feed
`SID`	system identifier of the **operations system**
`YY-MM-DD`	year-month-day Note: $70 \leq yy \leq 99$ maps to 1970 through 1999 $00 \leq yy \leq 37$ maps to 2000 through 2037 $38 \leq yy \leq 69$ are invalid values
`HH:MM:SS`	hour:minute:second
`M`	indicates an output response
`CTAG`	correlation tag of the input TL1 message to which the acknowledgment refers
`DENY`	a key word meaning the command cannot be executed
`ERCD`	4-character error code field

`<terminator>`	The ";" character is used for normal termination. The use of the ">" character means that more segments associated with this response message will follow under another header.

Error response example

This is how the user's screen would look with an error response.

```
LT-WBM 98-01-01 08:01:11
M  123456 DENY
   IIAC
   /* Input, Invalid Access Identifier, unknown AID */
;
```

□

Autonomous response messages

Definition

An autonomous response message is a message sent by the ***operations system*** in response to change(s) to the system state(s).

Autonomous response message format

Autonomous output messages have the following format:

Parameter	Display position
`<cr><lf><lf>`	blank line
`^^^SID^YYYY-MM-DD^HH:MM:SS<cr><lf>`	header line
`ACD^atag^verb^modifier[^modifier]<cr><lf>`	primary line
`^^^"quoted line"<cr><lf>`	secondary/quoted line
`^^^/* optional free-form comment line */<cr><lf>`	secondary/comment line
`....`	more secondary lines
`;`	terminator

Autonomous response parameters

The format parameters are explained in the following table:

Parameter	Explanation
`^`	space
`<cr><lf>`	carriage return and line feed
`SID`	the system ID of the **operations system**
`YY-MM-DD`	year-month-day Note: 70 ≤ yy ≤ 99 maps to 1970 through 1999 00 ≤ yy ≤ 37 maps to 2000 through 2037 38 ≤ yy ≤ 69 are invalid values
`HH:MM:SS`	hour-minute-second
`ACD`	alarmcode; identifies the severity of the alarm or a non-alarm message *C = critical, ** = Major, *^ = minor, A^ = non-alarm message

ATAG	The autonomous tag (ATAG) value is a 4-digit decimal number (0000 to 9999) that must be included in all autonomous messages. The ATAG counter is a circular counter incremented by one for each autonomous message on a per virtual circuit basis, starting from 0000 to 9999, then starting at 0000 again
quoted line	preceded and followed by double quote. The format follows the "aid:common block:specific block:state block" input command format
<terminator>	The semicolon ";" is used for normal termination. The use of the ` > ' character means that more segments associated with this response message will follow under another header.

Autonomous message example

All entries that have REPT as their command verb are autonomous output messages. Here is how the user‘s screen would look with the REPT-SW message displayed.

```
LT-WBM 98-01-01 08:00:00
A 001 REPT SW
"sc-1-#-#-tmg0-cp"
;
```

□

TL1 Messages

NAME

ACT-USER: Activate User

The **ACT-USER** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): Any

Beginning with Release 3.0, the user privilege code is
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

4.

INPUT FORMAT

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

DESCRIPTION

The **ACT-USER** command can be initiated to set up a login session with 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 login per active session is allowed. Any subsequent attempt on the same session is denied.

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

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

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 user is allowed to use either **ED-PID** to update the password identifier or **CANC-USER** to terminate the session.

An administrator is capable to re-enable the user by using the **ED-USER-SECU** command with alw_login=YES.

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

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

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

INPUT PARAMETERS

Table 3-1 **ACT-USER** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
uid	User Identifier. This parameter is available starting in Release 1. This is the unique user login identifier for which the **ACT-USER** login command is intended. Grouping and/or ranging of ***uid*** values for the **ACT-USER** command are not allowed. Valid ***uid*** values for the **ACT-USER** command are case-sensitive alphanumeric strings of 1 to 10 characters which have been previously provisioned as valid login IDs in the network element.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-1 ACT-USER Input Parameters (Sheet 2 of 2)

Parameter Name	Description
pid	Password Identifier. This required parameter is the confidential password authenticator for the given ***uid***. Valid ***pid*** values consist of case-sensitive strings of six to ten alphabetic, numeric, and special characters where at least two characters are non-alphabetic and at least one is a special character (white space is ignored). The special character can be one of the required non-alpha characters. For example, **TEST1+** is a valid password. 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. Valid passwords consist of at least two non-alphabetic characters with at least one special character. The special characters are defined in the OSEG, Appendix A. The first character of a password must be a letter. Values: 6 to 10 legal characters.

OUTPUT FORMAT

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

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

Starting with Release 2.1, when a user logs in successfully, the following response is returned:

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

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

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

Starting in Release 4.0, if the login request would otherwise complete successfully, but the user password has expired, the following partial completion response is returned:

```
   sid date time
M  ctag PRTL
   "<see the previous security parameters>"
   /* <see the previous security banner lines>
   */
   /* Your password has expired. Until you change your password (ED-PID)
      you will not be allowed further access to this Network Element.
   */
;
```

The user will be allowed three attempts to change their password. If the third attempt fails, the user will be logged out and the association dropped. The execution of any command prior to the successful change of the password will be counted as one of the three attempts to change the password. This includes failures of the **ED-PID** command due to incorrect data, attempts to execute valid commands other than the **ED-PID** command, or invalid commands, possibly due to a data entry error. In all cases, the system will return the error response **ICNV, Input, Command Not Valid**.

When a user attempts to log in using a disabled User ID, the login is denied and the following error response is returned:

```
   sid date time
M  ctag DENY
   /* Your User ID has been disabled. Please contact the System
      Administrator.
   */
;
```

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

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* included in the output response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command.

Table 3-2 **ACT-USER** Output Parameters

Parameter Name	Description
uid	User Identifier. This parameter is available starting in Release 1. This is included in the command by the OS/CIT and repeated by the network element as a confirmation that the given user identifier is successfully logged in. Values: Any combination of up to 10 alphanumeric characters.
lastdate	This parameter is available starting in Release 1. This is the date of the last session established by this *uid*. Value(s): YY-MM-DD
lasttime	This parameter is available starting in Release 1. This is the time of the last session established by this *uid*. Value(s): HH-MM-SS
attempts	This parameter is available starting in Release 1. This is the number of unsuccessful login attempts since the last successful login session on this network element. Values: Any integer ranging from 0 to 98. Starting in Release 2.1, when the number of denied **ACT-USER** commands due to an invalid ***uid/pid*** pair reaches/exceeds the maximum number of consecutive invalid session setup attempts (***thrshld***, refer to the **ED-NE-SECU** command) for the same ***uid*** within the interval specified by ***intrvl*** (refer to the **ED-NE-SECU** command), an Intruder Alert Alarm is raised by the network element. The internal count of denied logins is reset to zero after a successful login.
systype	This parameter is available starting in Release 1. This specifies the type of system. Values: WaveStar_2.5G_10G, WaveStar_BandWidth_Manager, Network_Communication_Controller, WaveStar_10G_STM64 WaveStar_4F192
release	This parameter is available starting in Release 1. This is the software Release number of the system, in the form xx.yy.zz. Following the release number, an internal release identifier may appear in parentheses to identify the internal software load. Example: 01.02.03.
upc	User Privilege Code List. See the **ENT-USER-SECU** command for a description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-3 **ACT-USER** Output *spec_block* Parameters

Parameter Name	Description
sysavst	System Availability Status. This parameter is available starting in Release 2.1. This parameter reports the initialization status of the system. Values: ■ AVAILABLE — System has completed initializing and is ready. ■ INITIALIZING — System is not available because it is still initializing. ■ FAILEDUNEQ — System controller has failed or is unequipped.
tmleft	Time left before password expires, in days. This parameter is available starting in Release 2. Value(s): ■ 1 to 5. If there are more than 5 days left before the password expires, this parameter is omitted.

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-WBM-789:mvdlm5:123456::kj5lee+3;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   “mvdlm5:97-12-31,09-00-00,1,WaveStar_BandWidth_Manager,1.1.13,P3&M3
”
   /* Lucent Technologies WaveStar_BandWidth_Manager Release 1.1.13
   User Privilege Code: P3&M3
   LUCENT TECHNOLOGIES - PROPRIETARY
   THIS SOFTWARE CONTAINS INFORMATION OF LUCENT TECHNOLOGIES
   AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE
   WITH APPLICABLE AGREEMENTS.
   NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.
   USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY
   AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN
   LUCENT TECHNOLOGIES AND CUSTOMER.
   UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
   */
;
```

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

```
ACT-USER:LT-WBM-789:mvdlm5:123456::kj5lee+3;

   LT-WBM-789 01-08-15 08:00:00
M  123456 PRTL
   “mvdlm5:97-12-31,09-00-00,23”
   /* Your password has expired. Until you change your password (ED-PID)
   you will not be allowed further access to this Network Element */
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The listed requirements apply to the **ACT-USER** command.

If a user attempts to login after the maximum number of login sessions has been reached, the following error message will be displayed. There can be a maximum of 14 login sessions for a “normal” user with an additional 2 sessions for a superuser. (Once the maximum of 14 sessions has been reached, no more “normal” user sessions will be allowed. No more superuser sessions are allowed once the 14 +2 overload sessions have been activated.)

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

RELATED TL1 MESSAGES

CANC-USER

CANC-USER-SECU

DLT-USER-SECU

ED-PID

ED-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

NAME

ALW-ALM: Allow Alarm

The **ALW-ALM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

ALW-ALM:*tid*::*ctag*;

DESCRIPTION

The **ALW-ALM** command can be initiated by users to enable audible and visual alarms. The **ALW-ALM** command only needs to be invoked if the **INH-ALM** command had previously inhibited reporting.

The **ALW-ALM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-4 **ALW-ALM** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameters syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for input parameters syntax and description of this parameter.

OUTPUT FORMAT

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

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

If the network element receives an **ALW-ALM** command from a user when audible and visual alarms had already been enabled, the network element provides a normal completion response.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **ALW-ALM** command:

```
ALW-ALM:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ALW-ALM** command.

RELATED TL1 MESSAGES

INH-ALM

NAME

ALW-MSG: Allow Message

The **ALW-MSG** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

ALW-MSG-ALL:*tid*::*ctag*;

DESCRIPTION

The **ALW-MSG** command allows the NE to resume the forwarding of autonomous messages previously suspended with the **INH-MSG** command. See the **INH-MSG** command for a discussion on suspending the forwarding of autonomous messages.

The initial state of the user's session is to allow all autonomous messages that the user's login was provisioned with. If the **ALW-MSG** command instructs the resumption of autonomous messages that are already being forwarded, it will complete successfully.

The **ALW-MSG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-5 **ALW-MSG** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-5 **`ALW-MSG`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **`ALW-MSG`** 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 the **`RTRV-HDR`** command.

EXAMPLE INPUT/OUTPUT

The following is an example of the **`ALW-MSG`** command:

```
ALW-MSG-ALL:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there also apply to the **`ALW-MSG`** command.

RELATED TL1 MESSAGES

ED-USER-SECU

INH-MSG

RTRV-ATTR-MSG

NAME

APPLY: Install New Software Generic

The **APPLY** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

2.

INPUT FORMAT

APPLY:*tid*::*ctag*::,[,*qualifier*];

DESCRIPTION

The **APPLY** command can be used to install a copy of a software generic stored in the network element, overwriting the currently executing software. Installation of the software causes the system to reset.

Installation is only possible if the system is not in maintenance condition (MCOND). If the system is in MCOND, then the source of the MCOND should be removed first. If a manual command put the system in MCOND, then the user should also exit MCOND manually. If the system is in MCOND due to some problem, then the problem should be corrected which will cause MCOND to be exited.

Starting in Release 2.0, the MCOND restrictions that are described in the previous paragraph have been removed. The **APPLY** command now proceeds as follows:

- If the system is put into MCOND manually, then the **APPLY** will proceed and the system will exit MCOND automatically.
- If the system is not in MCOND, then the system will be automatically be put into MCOND for the duration of the installation. After installation is completed, MCOND will be exited automatically.

Background Information about NVM

The Non Volatile Memory (NVM) is assumed to be partitioned into a previous section and a current section. Current NVM contains a copy of the generic that is currently executing. Previous NVM usually contains a copy of the generic that the system previously used. New generics are downloaded to previous NVM. Installation via **APPLY** causes the contents of previous NVM to be installed. During installation, a “pointer” is changed so that what is identified as current NVM contains the currently executing generic and previous NVM contains the previous generic.

The **APPLY** command generates a **REPT DBCHG** message. The message will be generated before the command causes the system to be reset.

INPUT PARAMETERS

Table 3-6 **APPLY** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
qualifier	Allowed values for the ***qualifier*** parameter are: ■ **INSTALL** causes the software download to be installed. This is the default action if no value is specified for ***qualifier***. Prior to installation, the software state must be equal to **DOWNLOADED**. The software state can be retrieved via **RTRV-PRMTR-SFTWR**. ■ **PREVIOUS** forces the generic that is in previous NVM to be installed, even if it has been previously installed.

The software state, as indicated by the **RTRV-PRMTR-SFTWR** command, is **DOWNLOADED** if the generic has been downloaded but not yet successfully installed. If a generic has been previously installed, then it has a state equal to **PREVIOUS**.

For a software generic of state equal to **PREVIOUS**, the **APPLY** command will be denied unless ***qualifier*** has the value **PREVIOUS**. This helps to prevent an inadvertent second **APPLY** from replacing the currently executing generic with the previous one.

The **PREVIOUS** option for **APPLY** is intended for use as a manual backout and is limited to either of the following cases:

- The previous generic and the current database are compatible.
- The previous generic and the previous database are compatible.

If the previous generic is incompatible with both databases, then the **APPLY** command will not be successful.

The **initiation** of an installation is recorded in the history log.

When a network element receives an **APPLY** command and as a result successfully installs a new software generic, the network element loses any command messages that were pending and all alarms are cleared. All performance monitoring bins are cleared, and any standing conditions are cleared.

If an installation is already in progress, then another request for an installation will be DENY'd.

OUTPUT FORMAT

OUTPUT PARAMETERS

The output parameters *sid, date, time* in the normal completion response are specified in the **OUTPUT PARAMETERS** section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows an **APPLY** command that requests immediate installation of a new generic:

```
APPLY:LT-WBM::123456::,;

   LT-WBM 98-01-01 08:00:00
M  123456 COMPLD
   /* New Software generic installation in progress */
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **APPLY** command.

If an **APPLY** request is entered and the software copy has been previously installed (that is, its state is **PREVIOUS**), then the following error response is given:

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

If the type of file is inappropriate for installation to the network element, then the following error response is given:

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

For example, attempting to install BWM software to the NCC will be denied.

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

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

The following condition will cause an SARB error response:

- All resources busy
- an installation is already in progress.

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

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

The following list identifies conditions that will cause an SROF error response:

- Install failure
- An uncorrupted copy of software does not reside in the network element.

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

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

The following condition will cause an ENSG error response:

- Generic not available.

RELATED TL1 MESSAGES

CPY-MEM

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

NAME

CANC-USER-SECU: Cancel User Security

The **CANC-USER-SECU** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): S5

COMMAND PRIORITY

1.

INPUT FORMAT

CANC-USER-SECU:*tid*:[*uid*]:*ctag*;

DESCRIPTION

Execution of this command on a network element by an administrator terminates a login session of another user with the network element.

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

INPUT PARAMETERS

Table 3-7 **CANC-USER-SECU** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-7 **`CANC-USER-SECU`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
uid	User Identifier. This is the ***uid*** of the user whose session is being terminated. If an administrator wants to force log out another user, then the administrator could do so by specifying that ***uid***. If an administrator wants to force log out all the users that are currently logged in, then the administrator could do so by omitting the ***uid***. Logging out all users by omitting the ***uid*** does not include the administrators logins. An administrator could log out the other administrator. Value(s): Refer to **`ACT-USER`** for the syntax/values.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

```
CANC-USER-SECU:LT-WBM-789:jsmith:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **CANC-USER-SECU** command.

RELATED TL1 MESSAGES

ACT-USER

CANC-USER

DLT-USER-SECU

ED-NE-SECU

ED-USER-SECU

ENT-USER-SECU

RTRV-NE-SECU

RTRV-USER-SECU

NAME

CANC-USER: Cancel User

The **CANC-USER** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): Any

Beginning with Release 3.0, the user privilege code is
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

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

Beginning in Release 2.0, the input syntax is:
CANC-USER:*tid*:[*uid*]:*ctag*;

DESCRIPTION

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

When the network element receives a **CANC-USER** command, the login session on the network element will be terminated provided that the user is currently active on the network element.

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

INPUT PARAMETERS

Table 3-8 **CANC-USER** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.
uid	User Identifier. This parameter is available starting in Release 2. This is the user identifier that was used in the **ACT-USER** command that initiated this session. This is an optional parameter; if it is not specified, it defaults to the user identifier of this session. Value(s): See the description of the ***uid*** parameter in the **ACT-USER** command.

OUTPUT FORMAT

If the logout 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 the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

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

```
CANC-USER:LT-WBM-789::123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ACT-USER

CANC-USER-SECU

DLT-USER-SECU

ED-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

NAME

CNVT-CCT: Convert Cross-Connect Topology

This command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

CNVT-CCT-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::[*in_aid2*]:
spec_block

Starting with Release 3.0, the syntax is:

CNVT-CCT-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::[*in_aid2]*
[,appg_aid]:*spec_block*

DESCRIPTION

This command can be initiated by a user to convert between a 1-way point-to-point cross connection and a path-protected cross connection.

For a 1-way Point-to-Point to a Path-Protected conversion, the existing point-to-point cross-connection leg is converted into a single atomic path-protected cross connection between the logical input AID of the existing point-to-point cross connection, the specified protection logical input AID and logical output AID of the existing point-to-point cross connection. The leg comprised of the AIDs of the existing point-to-point cross connection shall be designated as the path protection group working leg at the time the cross connection is converted.

It is left to the user which leg should be removed.

The use of the input parameters is described in the **CNVT-CCT** Parameter Details table.

Table 3-9 **`CNVT-CCT`** Parameter Details

Conversion (occct -> cct)		Parameter Details				
occt	***cct***	***in_aid***	***out_aid***	***in_aid2***	***appg_aid***	***newinaid***
1WAY	**1WAYPPROT**	**worker input**	**output**	**-**	-	new protection input
1WAYPPROT	**1WAY**	**worker input**	**output**	**protection input**	-	remaining input leg
ADJCTPPROT	**1WAY**	**worker input**	**adjunct output**	**protection input**		either ***in_aid*** or ***in_aid2***
1WAY	**ADJCTPPROT**	**worker input**	**adjunct output**		***appg***	new protection input

This command generates a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-10 **`CNVT-CCT`** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the convert cross-connect topology command acts. Values: ■ **VC3** ■ **VC4** ■ **VC44C** ■ **VC416C**
tid	Target Identifier. Refer to **`RTRV-HDR`** for the input parameter syntax and description of this parameter.

Table 3-10 **CNVT-CCT** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
appg_aid	Adjunct Path Protection Group Access Identifier. It identifies an associated path protection group when establishing adjunct cross connection. See the AID table in OSEG Appendix A. Values: logical AID.
in_aid	Input Access Identifier. Values: logical tributary AID (See the AID table in OSEG Appendix A).
in_aid2	2nd Input Access Identifier. This parameter is applicable to path-protected cross connections only. The tributary specified via ***in_aid*** is the working leg and the tributary specified by ***in_aid2*** is the protection leg. Values: logical tributary AID.
out_aid	Output Access Identifier. Values: logical tributary AID.
ctag	Correlation Tag. Refer to **RTRV-HDR** for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-11 **CNVT-CCT** Input *spec_block* Parameters (Sheet 1 of 4)

Parameter Name	Description
newloca	Specifies the source tid of the new leg when converting from a point-to-point to a path-protected cross connect. Only present if ***in_aid2*** is BLSR. Values: See ***tid*** in the **RTRV-HDR** command. The value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed). The value identified by ***newinaid*** depends on the type of conversion performed. The parameter ***newinaid*** can identify: a. The protection input. When converting a one-way point-to-point cross connect ***occt***= **1WAY** into a one-way path-protected cross connect ***cct***=**1WAYPPROT**.

Table 3-11 **CNVT-CCT** Input *spec_block* Parameters (Sheet 2 of 4)

Parameter Name	Description
	b. The input of the resultant point-to-point protected cross connect. When converting a one-way path-protected cross connect ***occt***=**1WAYPPROT** into a one-way point-to-point cross connect ***cct***=**1WAY**. c. The input of the resultant point-to-point protected cross connect. When converting a one-way adjunct path-protected cross connect ***occt***=**ADJCTPPROT** into a one-way point-to-point cross connect ***cct***=**1WAY**. d. When converting a one-way point-to-point cross connect ***occt***=**1WAY** into a adjunct path-protected cross connect ***cct***=**ADJCTPPROT**, ***newinaid*** has to have the same value as ***in_aid2***.
occt	Specifies the original cross-connection topology. This parameter should not be the same as ***cct***. Values: ■ **1WAY** ■ **1WAYPPROT**. ■ **ADJCTPPROT**
cct	Specifies the new cross-connection topology. This parameter should not be the same as ***occt***. Values: ■ **1WAY** ■ **1WAYPPROT**. ■ **ADJCTPPROT**

Table 3-11 **`CNVT-CCT`** Input *spec_block* Parameters (Sheet 3 of 4)

Parameter Name	Description
ppbv	Path Protection Behavior parameter is used to set the initial values of the path protection switching parameters for the path protection group that is established as part of a path-protected atomic cross connection. Values: ■ **NN** (rme=DISABLE, hte=DISABLE) ■ **RN** (rme=ENABLE, hte=DISABLE) ■ **NH** (rme=DISABLE, hte=ENABLE) ■ **RH** (rme=ENABLE, hte=ENABLE) The initial value is NN for UPSR; for DNI/DRI, the initial value is RN. *ppbv* is not returned by **`RTRV-CRS`**. **`RTRV-PROTN-GRP`** should be used to return *rme*, *hte*.
ppgname	Path Protection Group Name is a user-defined string that identifies a path protection group. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 26 characters. Must be included in quotes.

Table 3-11 **CNVT-CCT** Input *spec_block* Parameters (Sheet 4 of 4)

Parameter Name	Description
xcapp	Application indicates one of the applications that are supported by compound cross-connection topologies. Values: **0-255** Suggest assignments: 0) Unknown 1) 1-Way Point-to-Point 2) 1-Way Path-Protected 3) 1-Way Adjunct Path-Protected 10) 2-Way Point-to-Point 20) UPSR (or SNCP Ring) Add, Drop 21) UPSR (or SNCP) Ring-to-Ring, Single Node Interconnection, Same NE 22) UPSR (or SNCP) Drop, 1-Way Broadcast 30) Logical Ring (or SNCP) Add, Drop 40) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Node 41) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE 42) Ring Interworking, Dual Transmit, BLSR (or MS-SPRing) Terminating Node 50) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring) 51) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring) Nodes in Same NE 60) 1-Way Broadcast -- note: this is with N greater than or equal to 2. Given a specific value, the GUI from a Network Element Manager using this command should display the appropriate text string, selecting either BLSR or MS-SPRing and either UPSR or SNCP, depending on the provisioning of the Interface Standard Default.
xcnum	Cross-Connection Number identifies each cross-connection leg in a specific compound cross connection. Any nine digit number is acceptable. Recommended format of the nine digits are allocated as follows (where the digit values pertain to *out_aid*): two digits for the bay, one digit for the shelf, two digits for the slot, one digit for the port, and three digits for the trib.The default value is 000000000. For the non-numeric slots, the slot digits shall be assigned as follows: STM64: trw=90 and tre=91 BWM 10G shelf: tr1=90, tr2=91, tr3=92, tr4=93 2.5G/10G: trw=90, tre=91 10G 4F: tr1=90, tr2=91, tr3=92, tr4=93.

OUTPUT FORMAT

If the **CNVT-CCT** 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 completion of a **CNVT-CCT** command. In this example, an existing 1-way cross connection is being converted to a path-protected cross connection.

```
CNVT-CCT-STS1:LT-WBM-789:1-1-U-#-11-1-1,1-1-F01-EW-02-1-1:
123456:::NEWLOCA=LT-WBM-974,NEWINAID=1-1-F01-WW-04-1-1,
OCCT=1WAY,CCT=1WAYPPROT;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example shows a successful completion of a **CNVT-CCT** command. In this example, an existing path-protected cross connection is being converted to a 1-way cross connection.

```
CNVT-CCT-STS1:LT-WBM-789:1-1-U-#-11-1-1,1-1-F01-EW-02-1-1:123456::
1-1-#-#-1-13-1:NEWINAID=1-1-U-#-11-1-1,OCCT=1WAYPPROT,CCT=1WAY;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **CNVT-CCT** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **INPUT, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response (for a specific product release, some of these conditions might not be applicable):

- The specified adjunct XC is not associated with an existing path protection group.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following condition will cause an IENE error response:

- One or more of the tributaries specified by the command's AIDs does not exist.

The **INPUT, Parameter Not Consistent** error response is shown below:

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

The following list identifies conditions that will cause an IPNC error response:

- The rate is not consistent with an existing reservation.
- The TID is not consistent with the existing reservation.
- The source TID is not consistent with an existing cross connection that uses the same input.
- The specified rate is not equivalent to the rate of the existing cross connection.

The **INPUT, Data Not Consistent** error response is shown below:

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

The following list identifies conditions that will cause an IDNC error response:

- The specified tributary does not support the indicated XC rate.
- The tributary boundary is inconsistent with the indicated XC rate.
- The existing topology parameter is not consistent with the atomic topology of the cross connection identified by the logical input AIDs and logical output AID.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- Not a valid topology conversion. The valid conversions are:

— Point-to-point to path-protected

— Path-protected to point-to-point.

- Too many cross connections originating from the same tributary.
- Improper bridging of path-protected cross connection.
- The input port is provisioned for fixed rate mode, but the specified cross-connection rate differs from the rate indicated by the tributary input signal rate parameter or by the tributary unequipped output signal rate parameter.
- Cross-connection rate is too large for 2F BLSR/MSSPRING application.
- Establishing a through connection on tributary with existing reservation.
- Establishing XC to protection tributary of a 1+1 optical protection group or a 1xN optical protection group.
- Establishing XC to a tributary of a 1XNELEC protection pack.
- The port directionality parameter of the DS3 port does not permit a cross connection.
- The tributary has an existing cross-connect loopback.
- The tributary has an existing test access connection or it is a test port.
- The tributary has an existing reservation and the attempted cross connection is path-protected.
- The tributary has an existing reservation and the attempted cross connection is adjunct path-protected.
- The path-protected XC has inputs from ports with different interface standards.
- The path-protected XC has OC48 inputs from different shelves.
- The adjunct path-protected XC has OC48 inputs from different shelves.
- Removal of 1-way path-protected cross connection with associated 1-way adjunct path-protected cross connection.

- Removal of a cross connection from a tributary used in a test access connection.
- Removal of a cross connection from a tributary used in a loopback connection.

The **Status, All Resources Busy** error response is shown below:

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

The following condition will cause an SARB error response (for a specific product release, some of these conditions might not be applicable):

- Intra system capacity exceeded (implies a multi-shelf system).

RELATED TL1 MESSAGES

DLT-CRS

ED-CRS

ENT-CRS

RTRV-CRS

NAME

`CPY-MEM:` Copy Memory

The **`CPY-MEM`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

2.

INPUT FORMAT

```
CPY-MEM:tid::ctag::from,[src],to,[dst],class;
```

DESCRIPTION

The **`CPY-MEM`** command can be used to download software generics and also backup/restore the database. This command copies either program data or database from one memory device to another.

The memory devices are identified by directory names if they are located remotely from the network element, for example, at the CIT. The primary memory device is located at the network element, and will be referred to as PRI. **`CPY-MEM`** can only be used to copy between a file store and PRI or from PRI to a file store.

The NVM has one partition for the generic. This partition has two directories: one usually contains the previous generic and the other the current generic. The **DOWNLOAD** option of **`CPY-MEM`** is used to download new generics to previous NVM. Installation via **`APPLY`** causes the contents of previous NVM to be installed. Following installation, a “pointer” is changed so that what is identified as current NVM contains the currently executing generic and previous NVM contains the previous generic. For the database, there are two partitions: current and previous.

The **BACKUP** option of **`CPY-MEM`** may be used to copy the database that is in current NVM to a file store. The **RESTORE** option copies a database from a file store and places it into previous NVM and then installs it as the working database.

The **`CPY-MEM`** command generates a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-12 **CPY-MEM** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
from	From Memory Type. Specifies the memory from where the data is being transferred. FTAM applications require that the *from* parameter include fields about psel, ssel, tsel, nsap. Details about the fields are given later in the text. These fields are preceeded by an identifier which gives further information about the application. For example, a *from* value of "EMS,*psel*,*ssel*,*tsel*,*nsap*" implies that the file comes from the EMS and the *psel*, *ssel*, *tsel*, *nsap* specifically identify the Element Management System. If the *psel*, *ssel*, *tsel*, *nsap* that are entered for the *from* parameter actually identity a CIT, the **CPY-MEM** command will still successfully execute even though the identifier claims an EMS was being used for the source. That is, the leading identify in the *from* parameter is really an informational field and not crucial to the operation of the command. However, a recognizable value must be used for this identifier (such as CIT or EMS) or else the command will be DENY'd. Because the values for *from* must be contained within quotation marks, the identifier field is case sensitive. CIT will be recognized, but not cit. Values: ■ "**CIT**,***psel***,***ssel***,***tsel***,***nsap***" Craft Interface Terminal Only used for OSI (FTAM) file transfers *from* the CIT directly *to* the NE. The CIT's NSAP is used for ***psel*** etc. ■ "**EMS**,***psel***,***ssel***,***tsel***,***nsap***" Element Management System Only used for OSI (FTAM) file transfers *from* the EMS directly *to* the NE. The EMS's NSAP is used for ***psel*** etc.

Table 3-12 **`CPY-MEM`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ "**FTP**" (starting in Release 4.0). FTP Server. If the connection to the NE is direct TCP/IP, the ***from*** parameter shall be set to FTP. This could even include a TCP/IP gateway if the gateway supports IP tunneling. The *src* parameter is specified via a FTP file format (URL) which is described later in the text ■ "**PRI**" PRImary Non Volatile Memory. Used for a file transfer *from* the network element's PRI *to* the CIT/EMS.
src	A directory name. It is omitted if ***from*** is **PRI**.
to	To Memory Type. Specifies the memory where the data is being transferred to. See the parameter ***from*** in this table for values. In the description for ***from***, the following substitutions should be made: *from -> to*, *to -> from*, *src -> dst*. For example, "*from* the CIT *to* the NE" would become " "*to* the CIT *from* the NE"."
dst	A directory name. It is omitted if ***to*** is **PRI**.
class	Specifies the class of the copy. Values: ■ **DOWNLOAD** Download the program. ■ **BACKUP** Copy the database to a backup location. ■ **RESTORE** Restore the database from a backup directory.

In the **`CPY-MEM`** Input Parameters Table, ***sel***, ***ssel***, ***tsel***, and ***nsap*** are part of the ***from*** or ***to*** parameters. The size of ***sel***, ***ssel***, ***tsel***, and ***nsap*** is as follows:

- ***psel*** (path selector): 0-4 bytes (0-8 hex characters)
- ***ssel*** (session selector): 0-4 bytes (0-8 hex characters)
- ***tsel*** (transport selector): 0-16 bytes (0-32 hex characters)
- ***nsap*** (network session): 20 bytes (40 hex characters).

There can only be an even number of hex characters since they are generated from bytes and each byte corresponds to 2 hex characters.

From Most Significant Byte (MSB) to LSB, these bytes are (the number in parenthesis equals number of bytes): IDP(3), DFI(1), ORG(3), RES(2), RD(2), AREA(2), SYS(6), SEL(1). The SEL field of the NSAP is also called the NSEL (network selector).

When the Graphical User Interface (GUI) version of CIT is used to enter a directory name for download, backup, or restore, the craft is not required to enter ***psel***, ***ssel***, ***tsel***, and ***nsap***; they will be entered automatically.

If **`CPY-MEM`** utilizes the Transport Service Bridge (TSB), the command must contain some TSB information to work correctly. The ***tsel*** field of the **`CPY-MEM`** command must contain the ***ssel*** and the hex encoded IP address of the SNMS system. The format for the ***tsel*** field becomes:

dc[bytesize][tsel]bc[bytesize][hexofsnmsipaddress].

For example, if ***ssel*** is 5454, then ***tsel*** might be dc025454bc04870da379.

The directory that is specified as an ***src*** or ***dst*** must be enclosed in double quotes. Because backslash (\) is the TL1 escape character, to include a backslash as part of a directory name, it must be entered as a double backslash. Craft personnel will not have to type it for the GUI. The second backslash is automatically inserted.

The directory name is limited to a maximum of 128 characters. A double backslash counts as only one character.

Examples of valid directory names are:

- "d:\\bwm\\data\\file1.dat”
- “/bwm/generic/01_02_15.prog”.

To use the FTP to FTAM gateway on the NCC for file transfers, the *src* or *dst* directory must be in the FTP file format: ftp://[login]:[password]@[directory address]. For security reasons, the [password] portion of the FTP file format must be masked prior to generating any autonomous messages.

The following table outlines functions that are supported by the **`CPY-MEM`** command. The **BACKUP** and **RESTORE** features may not be supported in initial releases. When supported, they will be included in the **CPY-MEM** Input Parameters Table.

Table 3-13 **CPY-MEM** Capabilities

Class	*From*	*Src*	*To*	*Dst*
DOWNLOAD **DOWNLOAD**	CIT, EMS EMS	directory directory	PRI CIT	 directory
BACKUP	PRI		CIT, EMS	directory
RESTORE	CIT, EMS	directory	PRI	

Starting in Release 4.0, the **CPY-MEM** capabilities table is enhanced as shown below to include the FTP feature.

Table 3-14 **CPY-MEM** Capabilities

Class	*From*	*Src*	*To*	*Dst*
DOWNLOAD **DOWNLOAD** **DOWNLOAD**	CIT, EMS EMS FTP	directory directory URL	PRI CIT PRI	- directory -
BACKUP **BACKUP**	PRI PRI	- -	CIT, EMS FTP	directory URL
RESTORE **RESTORE**	CIT, EMS FTP	directory URL	PRI PRI	- -

The **CPY-MEM** command can be used to download a program. The download can come from the CIT or EMS. A directory must be specified for ***src***.

The program will be downloaded to the previous partition of primary Non Volatile Memory (PRI). The program can be downloaded from the EMS to the CIT. If the download is to the CIT, then a directory will be specified for the destination.

Starting in Release 4.0, the download can come from an FTP Server (in addition to the CIT or EMS). A URL must be specified for ***src***.

The **CPY-MEM** command can be used to backup the database from the current partition of PRI to a destination which is located at the CIT or EMS. A directory must be specified for the destination.

Starting in Release 4.0, the backup destination can be an FTP Server (in addition to the CIT or EMS). A URL must be specified for the destination.

The **CPY-MEM** command can be used to restore the database from a source at the CIT or EMS. A directory must be specified for the source. The database is copied to PRI.

There are two phases to database restoration: copying the database from the source (for example, the CIT) to NVM and then copying the database from NVM to working memory. The first phase takes much longer than the second.

Starting in Release 4.0, the restoration source can be an FTP Server (in addition to the CIT or EMS). The database is copied to PRI.

When **CPY-MEM** is used to restore a database, the previous partition of NVM is used as an intermediate storage. This minimizes the effect of copying to NVM since the current partition of NVM is still available for database updates. Also, if communications fail during the copy to previous NVM, the current database is still available.

When **CPY-MEM** is used to restore a database to NVM, the network element will install the database to working memory before **CPY-MEM** returns COMPLD. Database restoration is only applicable when system is in maintenance condition.

The automatic installation of the database for a **RESTORE** is in contrast with the manual installation (via **APPLY**) of software required after a **DOWNLOAD**.

After the database has been installed to working memory, the working database contains provisioning that was in the restoration directory. As an example, assume a PM threshold was at 10^{-6} when a backup was created. Subsequently, the threshold was changed to 10^{-7}. Later, it became necessary to restore the database from the backup. This restoration would change the threshold back to 10^{-6}. If it is desired to have the threshold at 10^{-7}, then it would have to be reprovisioned.

As another example, assume a user id and password are entered for Tom before the most recent backup. After the backup, a user id and password are entered for Joe. Then a restoration of the database occurs. The network element would then have a login/password for Tom but not for Joe.

Generalizing the examples:

After a database has been restored into working memory, the history log should be examined to determine if any parameters need to be reprovisioned to reflect changes that occurred after the backup was created.

Note: Backup and restoration does not effect the command history log.

After a database restoration, if there is a discrepancy between the attributes of the hardware and the attributes found in NVM, then an alarm will be issued telling the craft about the discrepancy, but neither the hardware nor the NVM will be altered automatically.

Example of a discrepancy: The hardware indicates that an OC-3 pack is in slot 6, while the software indicates that a DS3EC1 pack is in that slot.

OUTPUT FORMAT

If the network element fully complies with the **CPY-MEM** command, then the network element sends the following normal completion response after the copy has been completed:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

Download

The following examples show input and output of **CPY-MEM** commands for downloads. In these examples, carriage returns have been entered for clarity.

The first example shows a **CPY-MEM** request that downloads a new generic from the EMS to PRI. To cause *prgm* to execute, the **APPLY** command must be used.

```
CPY-MEM:LT-WBM::123456::
"EMS,02,04,02,39840F80000000000000000000008006A19784500",
"/nbm/release1/prgm",
"PRI",,DOWNLOAD;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example is similar to the first one, except this file comes from the CIT. Again the file transfer is via an OSI connection. Note that the source files starts at the route directory.

```
CPY-MEM:LT-WBM::123456::
"CIT,02,5353,5454,39840F8000000000000000000000008006A1978451D",
"/nbm/release1/prgm",
"PRI",,DOWNLOAD;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example downloads a file from the CIT to the NE via a direct TCP/IP connection. On a UNIX machine, the srcdirectory directory does not have to fully qualified, it will default to johndoe's home directory.

```
CPY-MEM:LT-WBM::123456::
"FTP",
"ftp://johndoe:pwd123@ftphost.company.com/srcdirectory",
"PRI",,DOWNLOAD;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example downloads a file from the CIT to the NE via a TCP/IP Gateway that does not support tunneling (BWM does not support tunneling). The NSAP address used in the **`CPY-MEM`** command is the address of the FTP to FTAM Gateway.

```
CPY-MEM:LT-WBM::123456::
"FTTD,02,5353,5454,39840F80000000000000000000000800765978451D",
"ftp://johndoe:pwd123@ftphost.company.com/srcdirectory",
"PRI",,DOWNLOAD;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example shows the **CPY-MEM** command used for performing a software download through the FTP to FTAM Gateway. This is similar to the previous example, except anonymous FTP is used since username and password are not specified. Also, the file needed for download has to reside at the root location of the FTP Server, since a directory was not specified in the FTP URL. The NSAP address used in the **CPY-MEM** command is the address of the FTP to FTAM Gateway.

```
CPY-MEM:LT-BWM::123456::
"FTTD,02,5353,5454,39840F80000000000000000000008006A1978451D",
"ftp://ftphost.company.com","PRI",,DOWNLOAD;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example downloads a file from the CIT to the NE via a TCP/IP Gateway and both the NE and Gateway support tunneling.

```
CPY-MEM:LT-WBM::123456::
"FTP",
"ftp://johndoe:pwd123@ftphost.company.com/srcdirectory",
"PRI",,DOWNLOAD;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

Backup

The following example shows a **CPY-MEM** request that backs up the database in NVM to the CIT and stores it in a directory named data in a location named 98_01_01. (When the GUI is used to specify a download, backup, or restore, the GUI prompts the craft for a directory name and automatically replaces each backslash with a double backslash).

```
CPY-MEM:LT-WBM::123456::"PRI",,"CIT,01,01,03,39840F8000000000000000000
008006A11234500","\\data\\98_01_01",BACKUP;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example shows the **CPY-MEM** command used for performing a database backup through the FTP to FTAM Gateway:

```
CPY-MEM:NETID::3::"PRI",,"FTTD,02,5353,5454,39840F80000000000000000000
00104B3BFD5511D","ftp://johndoe:pwd123@ftphost.company.com/directoryt
ostorein",BACKUP;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

Note that, when performing a backup to an FTP Server, the user must specify a username and password for write permission on the FTP Server. The NSAP address used in the **CPY-MEM** command is the address of the FTP to FTAM Gateway.

Restore

The following example shows a **CPY-MEM** command that restores the database from the CIT:

```
CPY-MEM:LT-WBM::123456::"CIT,01,01,03,39840F80000000000000000000008006A
13244500","\\data\\98_01_01","PRI",,RESTORE;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **CPY-MEM** command.

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

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

The following condition will cause an IDNV error response:

- Directory not specified.

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

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

The following list identifies conditions that will cause an SDNC error response:

- Invalid directory
- Invalid source file
- File store not found
- File access denied
- A copy ***to*** or ***from PRI*** was specified and the corresponding ***src***, ***dst*** fields were not omitted.

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

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

The following condition will cause an ENEQ error response:

- Insufficient file space.

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

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

The following condition will cause an EATN error response:

- Volume label is incorrect.

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

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

The following condition will cause an SRAC error response:

- Invalid NE type.

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

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

The following condition will cause an SARB error response:

- All resources busy
- a previous **CPY-MEM** has not finished.

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

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

The following list identifies conditions that will cause an SROF error response:

- FTAM error
- External communication failure
- Unsuccessful file transfer.

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

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

The following condition will cause an ENSG error response:

- Not a software generic file.

If a directory is specified that cannot be found or cannot be accessed due to improper privileges, then the following error response is given:

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

If the product type of the source does not match the product type of the network element, then the following error response is given:

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

If a source file is deemed invalid for miscellaneous reasons such as incorrect checksum, invalid control information, etc., then the following error response is given:

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

RELATED TL1 MESSAGES

APPLY

INIT-SYS

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

NAME

DLT-ASAP-PROF: Delete Alarm Severity Assignment Profile

The **DLT-ASAP-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-ASAP-PROF:*tid*::*ctag*::*pftype*,*pfname*;

DESCRIPTION

The **DLT-ASAP-PROF** command is used to delete an Alarm Severity Assignment Profile (ASAP).

General Description of Alarm Severity Assignment Profiles

For a general description of Alarm Severity Assignment Profiles, see **ENT-ASAP-PROF** which describes how:

- **DLT-ASAP-PROF** is used to delete an ASAP profile.
- **ED-ASAP-PROF** is used to change the name of a profile or its parameter values.
- **ENT-ASAP-PROF** is used to create a new profile.
- **RTRV-ASAP-ASGNMT** retrieves the AIDs that are using the profile.
- **RTRV-ASAP-PROF** retrieves the names of profiles and their parameter values.

The input parameters table of **ED-ASAP-PROF** gives details about each profile type. It lists the parameters for each profile, a description of the parameters, and the default values.

The **DLT-ASAP-PROF** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-15 `DLT-ASAP-PROF` Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
pftype	Profile Type. This parameter indicates the type of ASAP profile and may have one of the following values: ■ **APS** Automatic Protection Switch ■ **BLSR** Bilateral Switched Ring Protection Switch. For an SDH product, this also applies to MS-SPRing. ■ **DRIPATH** DRI/Path Protection Switch ■ **ENET** Ethernet ■ **ENV** Environmental (Miscellaneous Discrete) (starting in a future release). ■ **EQPT** Equipment ■ **PT** Path terminating, SONET ■ **PTSDH** Path terminating, SDH ■ **SDH** STM-N Port ■ **TIMING** System Timing ■ **TRIBSDH** VC-N tributary
pfname	Profile Name. This parameter indicates the name of the ASAP profile. Value(s): See the **`ENT-ASAP-PROF`** command for the values of this parameter.

`DLT-ASAP-PROF` can only be used to delete a profile that is currently not active.

A profile is defined to be *active* if it has been assigned to any network entity, for example, to an STM1 port.

If it is desired to delete an active profile, then first assign another profile to the network entities that are using the to-be-deleted profile, then delete the inactive profile.

OUTPUT FORMAT

If the network element fully complies with the **DLT-ASAP-PROF** command, then the following normal completion response is returned:

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

The command is denied if ***pftype*** does not have a profile named ***pfname***.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example deletes an **EQPT** ASAP profile that is named att:

```
DLT-ASAP-PROF:LT-WBM::123456::eqpt,att;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **DLT-ASAP-PROF** command.

The **INPUT, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response (for a specific product release, some of these conditions might not be applicable):

- The ***pfname*** parameter specified is not valid.

The **INPUT, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- An invalid ***pftype*** parameter is specified.

The **Status, Data Not Consistent** error response is shown below:

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

The following condition will cause an SDNC error response (for a specific product release, some of these conditions might not be applicable):

- The ***pfname*** parameter does not exist.

The **Input, Data, Not Consistent** error response is shown below:

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

The following condition will cause an IDNC error response (for a specific product release, some of these conditions might not be applicable):

- ***pfname*** is Default.

RELATED TL1 MESSAGES

ED-ASAP-PROF

ENT-ASAP-PROF

RTRV-ASAP-ASGNMT

RTRV-ASAP-PROF

NAME

DLT-CRS: Delete Cross Connection

The **DLT-CRS** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

Starting with Release 2.1, the syntax is:

DLT-CRS-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::[*cct*],[*in_aid2*],
[*appg_aid*];

DESCRIPTION

The **DLT-CRS** command can be initiated by a user to request the network element to remove a cross connection in the network element. The ***modifier*** in the **DLT-CRS** command indicates the cross-connection rate of the tributary on which the **DLT-CRS** acts.

The network element allows the removal of either one of the legs of an existing 2WAY cross connection.

The **DLT-CRS** command generates a **REPT DBCHG** message.

The network element will generate two **REPT DBCHG** messages if one leg of a 2WAY cross connection is removed, one message to indicate the removal of the leg and the other to indicate the conversion of cross-connection status from 2WAY to 1WAY.

INPUT PARAMETERS

Table 3-16 **DLT-CRS** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the remove cross-connection command is to act. Values: ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1) ■ **VC416C** (starting in Release 2)
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
in_aid	Input Access Identifier. Value(s): logical tributary AID (See the AID table in OSEG Appendix A). Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
in_aid2	2nd Input Access Identifier. This parameter is applicable to path-protected cross connections only. The tributary specified via ***in_aid*** is the working leg and the tributary specified by ***in_aid2*** is the protection leg. Value(s): logical tributary AID.
out_aid	Output Access Identifier. Value(s): logical tributary AID. Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
cct	Cross-Connect Topology. Values: ■ **1WAY** ■ **2WAY**(default). ■ **1WAYPPROT**.

Table 3-16 **`DLT-CRS`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **ADJCTPPROT**.
appg_aid	Adjunct Path Protection Group Access Identifier. It identifies an associated path protection group when establishing adjunct cross connection. See the AID table in OSEG Appendix A. Value(s): logical AID.

OUTPUT FORMAT

If the **`DLT-CRS`** command 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 the **`RTRV-HDR`** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **`DLT-CRS`** command by the network element. This example shows the removal of a 2WAY VC3 cross connection existing between the tributaries shown in the AID field.

```
DLT-CRS-VC3:LT-WBM-789:4-2-#-#-02-1-1,4-2-#-#-06-1-1:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **DLT-CRS** command.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following conditions will cause an IENE error response:

- The logical tributary does not exist.
- The specified cross connection does not exist.

The **INPUT, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The specified rate is not equivalent to the rate of the existing cross connection.

The **INPUT, Invalid ACcess identifier** error response is shown below:

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

The following condition will cause an IIAC error response:

- Invalid path protection group AID.

The **Status, Not in Valid State** error response is shown below:

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

The following conditions will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- The topology does not allow a deletion of cross connections.
- Removal of 1-way path-protected cross connection with associated 1-way adjunct path-protected cross connection.
- Removal of a cross connection from a tributary used in a test access connection.
- Removal of a cross connection from a tributary used in a loopback connection.

RELATED TL1 MESSAGES

ED-CRS

ENT-CRS

RTRV-CRS

NAME

DLT-EQPT: Delete Equipment

The **DLT-EQPT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-EQPT:*tid*:*aid*:*ctag*;

DESCRIPTION

The **DLT-EQPT** command deletes equipment that has been previously created with the **ENT-EQPT** command.

A bay cannot be deleted if the shelves provisioned within the bay have not been deleted.

A shelf cannot be deleted if the non-mandatory slots' circuit packs provisioned within the shelf have not been deleted.

A shelf cannot be deleted if it is (part of) the minimum configuration of that system (e.g., for 2F and STM64, the Main-shelf aid = 1-1). Trying to do so results in Error Response = 'IDNV' (Input, Data Not Valid), where one of the conditions is listed as "This Shelf is Illegal to remove".

A slot's optical circuit pack cannot be deleted if any of its ports are a member of a protection group, or if a cross connection, reservation, or loopback exists on any port of the circuit pack, or if the circuit pack has not been extracted.

A slot's electrical circuit pack cannot be deleted if a cross connection, reservation, or loopback exists on any port of the circuit pack, or if the circuit pack has not been extracted.

The **DLT-EQPT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-17 **`DLT-EQPT`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This is the address of an equipment component. The keyword "all" is allowed in a slot AID. See the AID table in OSEG Appendix A. Values: ■ I/O bay AID ■ I/O shelf AID ■ slot AID.
ctag	Correlation Tag. Refer to **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element fully complies with the equipment deletion 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** command section of **`RTRV-HDR`**.

EXAMPLE INPUT/OUTPUT

The following is an example of the **DLT-EQPT** command:

```
DLT-EQPT:LT-WBM:1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **DLT-EQPT** command.

The **INPUT, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response:

- This Bay is Illegal to remove.
- This Shelf is Illegal to remove.
- This Cp is Illegal to remove.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- Lower level entities (shelves) not yet removed.

- Lower level entities (CPs) not yet removed.
- Lower level 2.5G Shelves not removed.
- Lower level entities (Port Prot Grps, Xconns) not yet removed.
- Cp Not Yet OOS.
- Line timing reference not removed.

RELATED TL1 MESSAGES

ED-EQPT

ED-STATE-EQPT

ENT-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

DLT-IP-MAP: Delete TCP/IP map

The **DLT-IP-MAP** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-IP-MAP:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

The **DLT-IP-MAP** command deletes one entry from the Operations Systems application context ID map created by the **ENT-IP-MAP** command. The IP entry of the map can be deleted.

The **DLT-IP-MAP** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-18 **DLT-IP-MAP** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-19 **`DLT-IP-MAP`** Input *spec_block* Parameters

Parameter Name	Description
ip	This parameter is available starting in Release 4. This is the IP address or host name for the OS. If this parameter is omitted, the mapping is not changed and a COMPLD normal completion response is returned. Values: A 32-bit address consisting of four dot-separated decimal numbers ranging from **0** to **255**.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a successful command completion:

```
DLT-IP-MAP:LT-WBM::123456:::ip=179.78.46.8;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The error responses listed there also apply to the **DLT-IP-MAP** command.

RELATED TL1 MESSAGES

ED-NE

ENT-IP-MAP

RTRV-NE

RTRV-IP-MAP

NAME

DLT-IP-ROUTE: Delete IP Route table entry

The **DLT-IP-ROUTE** TL1 command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-IP-ROUTE:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **DLT-IP-ROUTE** command deletes an entry from the IP route table.

The **DLT-IP-ROUTE** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-20 **DLT-IP-ROUTE** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	This parameter is available in Release 1.0. Value(s): datacom AID (DCC circuit pack AID. See AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-21 `DLT-IP-ROUTE` Input *spec_block* Parameters

Parameter Name	Description
dest_ip	Destination IP address. Made up of four dot-separated decimal numbers ranging from 0 to 255. The default value is 0.0.0.0.
dest_mask	Destination Mask. Value(s): **0**…**32** The default value is **16**.
nxthopadr	Next_Hop_Address. Values: ■ **IPADDRESS** An IP Address. It is made up of four dot-separated decimal numbers ranging from 0 to 255, e.g. 192.35.20.34 ■ **NSAP** An NSAP is a hexadecimal representation of 8-20 octets, all concatenated (thus 16-40 hexadecimal digits, an even number), e.g. 39081500455f7c56458a01

OUTPUT FORMAT

After receiving the **`DLT-IP-ROUTE`** command, 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** command section of the **`RTRV-HDR`** command.

EXAMPLE INPUT/OUTPUT

The following is an example of the **DLT-IP-ROUTE** command:

```
DLT-IP-ROUTE:LT-WBM:1-1-#-#-dcc-cp:123456:::dest_ip=192.168.100.1,
dest_mask=24,nxthopadr=192.160.200.20;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The error messages listed there also apply to the **DLT-IP-ROUTE** command.

RELATED TL1 MESSAGES

ENT-IP-ROUTE

RTRV-IP-ROUTE

ED-IP-TUNNEL

RTRV-IP-TUNNEL

NAME

DLT-PROTN-GRP: Delete Protection Group

The **DLT-PROTN-GRP** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-PROTN-GRP:*tid*:[*aid*]:*ctag*::*protype*;

Starting in Release 2.0, the input format is:

DLT-PROTN-GRP:*tid*:[*aid*]:*ctag*::*protype*,[*rid*];

DESCRIPTION

The **DLT-PROTN-GRP** command instructs the network element to delete an optical protection group. Deletion of the group returns all of the members in the group to 0x1 protection. See **ENT-PROTN-GRP** for a description of protection groups.

The **DLT-PROTN-GRP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-22 **DLT-PROTN-GRP** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-22 **`DLT-PROTN-GRP`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. See the AID table in OSEG Appendix A If ***rid*** is specified, then ***aid*** can be omitted. The use of **all** in the AID is not allowed for the **`DLT-PROTN-GRP`** command. Values: ■ protection group AID Non-protection group AIDs are also allowed. In this case, the protection group associated with the AID will be accessed. The non-protection group AID values are a function of ***protype*** as follows: ■ **1+1**: port AID ■ **2F**: port AID (starting in Release 1) ■ **1xNOPT**: port AID (starting in Release 3)
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
protype	Protection Type. Values: ■ **1+1** ■ **2F** (starting in Release 1) ■ **1xNOPT** (starting in Release 3)
rid	Ring Identification Name. Storage and retrieval of the ***rid*** is case sensitive, but actual use of the ***rid*** to determine the corresponding protection group is case insensitive. Value(s): ASCII string of up to 15 characters from the TID character set. If this parameter is specified, then the command will operate on the protection group associated with that ring ID. If ***aid*** is specified, then ***rid*** can be omitted. This parameter is applicable for the following ***protype*** values: ■ **2F** (starting in Release 1) Starting in Release 3.0, the value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).

OUTPUT FORMAT

If the network element fully complies with the **DLT-PROTN-GRP** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the use of **DLT-PROTN-GRP** to remove a **2F** protection group:

```
DLT-PROTN-GRP:LT-WBM:1-1-t03:123456::2F;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example shows the use of **DLT-PROTN-GRP** to remove a **1+1** optical protection group:

```
DLT-PROTN-GRP:LT-WBM:1-1-o04:123456::1+1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **DLT-PROTN-GRP** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

If both an AID and an RID are specified as input parameters and they are inconsistent, then the following error response is returned:

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

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- There is an existing cross connection, cross-connect loopback, or test access connection on the port.
- There is a protection switch active or being requested for the port protection group.

RELATED TL1 MESSAGES

ED-PROTN-GRP

ENT-PROTN-GRP

RTRV-PROTN-GRP

NAME

DLT-TCA-PROF: Delete TCA Profile

The **DLT-TCA-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-TCA-PROF:*tid*::*ctag*::*pftype*,*pfname*;

DESCRIPTION

The **DLT-TCA-PROF** command can be initiated by users to remove a Performance Monitoring (PM) threshold profile from the system memory. The system supports two default sets of profiles called “Default” and “Default0.” Default contains real non-zero threshold value for each parameter in the profile, and Default0 contains zero threshold value for each parameter in the profile. The system default profiles cannot be deleted. For a general description of TCA profiles, refer to the **ENT-TCA-PROF** command.

Starting in Release 3.0, the Default0 profile will be changed to NotReported.

The **DLT-TCA-PROF** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-23 **DLT-TCA-PROF** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-23 **`DLT-TCA-PROF`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ **ENET** ■ **HOVC** ■ **PHYSICAL** ■ **RS-MS**
pfname	Profile Name. This indicates the name of the PM TCA profile to be deleted. The system default profiles cannot be deleted.

OUTPUT FORMAT

If the **`DLT-TCA-PROF`** command completes successfully, the following message is the normal response:

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

OUTPUT PARAMETERS

Refer to the **`RTRV-HDR`** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to the **`DLT-TCA-PROF`** command as well.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **DLT-TCA-PROF** command by the network element:

```
DLT-TCA-PROF:LT-WBM::123456::section-line,att;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there apply to the **DLT-TCA-PROF** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response:

- The profile name specified is not valid or too long.

The **INPUT, Data Not Consistent** error response is shown below:

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

The following condition will cause an IDNC error response:

- The system default profile is specified.

The **Input, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The profile type specified is not valid.

The **Status, Data Not Consistent, invalid instance of entity** error response is shown below:

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

The following condition will cause an SDNC error response:

- The profile name specified does not exist.

The **Status, Not in Valid State** error response is shown below:

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

The following condition will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- There are ports or tributaries provisioned to use the given profile for thresholding.

RELATED TL1 MESSAGES

ED-TCA-PROF

ENT-TCA-PROF

RTRV-TCA-ASGNMT

RTRV-TCA-PROF

NAME

DLT-ULSDCC-L4: Delete Upper Layer Stack DCC Layer 4

The **DLT-ULSDCC-L4** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-ULSDCC-L4:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **DLT-ULSDCC-L4** command is used to delete a row of data in buffers which hold user-settable parameters in Layer 4 of the OSI stack. These buffers are the TARP Manual Adjacent NE buffers.

The **DLT-ULSDCC-L4** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-24 **DLT-ULSDCC-L4** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 1. Value(s): datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-24 **`DLT-ULSDCC-L4`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	The following are the ***spec_block*** parameters.

Table 3-25 **`DLT-ULSDCC-L4`** Input *spec_block* Parameters

Parameter Name	Description
l4ajsys	This parameter is available starting in Release 1. This parameter specifies the System ID field of the NSAP address of a network element to be deleted from the TARP Manual Adjacency list of the target NE (i.e., the NE indicated by the ***tid*** parameter). Since the System ID is unique for each NE, it is sufficient to identify a specific Manual Adjacency. The format for this parameter is the 6 octet (12-digit hex) System ID field of the NSAP address of the Adjacent NE in the list. It deletes a single Manual Adjacent NE. Multiple Manual Adjacent NEs are deleted using multiple occurrences of the **`DLT-ULSDCC-L4`** command.

OUTPUT FORMAT

If the network element fully complies with the **`DLT-ULSDCC-L4`** request, the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **`RTRV-HDR`** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **`DLT-ULSDCC-L4`** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **DLT-ULSDCC-L4** command by the network element:

```
DLT-ULSDCC-L4:LT-WBM:1-1-#-#-dccei-cp:123456:::L4AJSYS=123456789ABC;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **DLT-ULSDCC-L4** command.

RELATED TL1 MESSAGES

ENT-ULSDCC-L3

ENT-ULSDCC-L4

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

NAME

DLT-USER-SECU: Delete User Security

The **DLT-USER-SECU** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

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

The network element shall always have two preinstalled users with full privileges in all functional categories. These two users will be referred to as Administrators (or Superusers). It will not be possible to remove either of the original administrator login IDs.

The **DLT-USER-SECU** command is used by an appropriate administrator to delete a user id from the network element. The **DLT-USER-SECU** command is applicable where a user account has to be deleted from the network element.

The **DLT-USER-SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-26 **DLT-USER-SECU** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
uid	User Identifier. Valid values are a case-sensitive alphanumeric string of 1 to 10 characters. Only a single ***uid*** is supported in the command. Refer to the **ACT-USER** command.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

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 any network element when this command is successfully executed, the user session identified by this ***uid*** is terminated, and the network element responds to the user who entered the **DLT-USER-SECU** command with a normal completion response.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **DLT-USER-SECU** command by the network element:

```
DLT-USER-SECU:LT-WBM-789:kjlee:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **DLT-USER-SECU** command.

RELATED TL1 COMMANDS

ED-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

NAME

ED-ASAP-PROF: Edit Alarm Severity Assignment Profile

The **ED-ASAP-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-ASAP-PROF:*tid*::*ctag*::*pftype*,*pfname*:*spec_block*;

DESCRIPTION

The **ED-ASAP-PROF** command is used to change the name or parameter values for an Alarm Severity Assignment Profile (ASAP).

For a general description of alarms, see the **RTRV-ALM** command. For a general description of Alarm Severity Assignment Profiles, see the **ENT-ASAP-PROF** command.

The **ED-ASAP-PROF** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

The input parameters are described in the table that follows.

Table 3-27 **ED-ASAP-PROF** Input Parameters (Sheet 1 of 9)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-27 **`ED-ASAP-PROF`** Input Parameters (Sheet 2 of 9)

Parameter Name	Description
pftype	Profile Type. This parameter indicates the type of ASAP profile and may have one of the following values: ■ **APS** — Automatic Protection Switch ■ **BLSR** — Bilateral Switched Ring Protection Switch (for an SDH product, this also applies to MS-SPRing) ■ **DRIPATH** — DRI/Path Protection Switch (starting in Release 1) ■ **ENET** — Ethernet (starting in Release 3) ■ **ENV** — Environmental (Miscellaneous Discrete) (starting in Release 3.) ■ **EQPT** — Equipment ■ **PT** — Path terminating, SONET (starting in Release 3) ■ **PTSDH** — Path terminating, SDH (starting in Release 3) ■ **SDH** — STM-N Port ■ **SYS** — System Events ■ **TIMING** — System Timing ■ **TRIBSDH** — VC-N tributary
pfname	Profile Name. This parameter indicates the name of the ASAP profile. Value(s): See the **`ENT-ASAP-PROF`** command for the values of this parameter.
spec_block	The ***spec_block*** and the parameters within it are all optional. Parameters within the ***spec_block*** are specified using a name-defined construct of: *keyword*=***value*** in a comma separated list. The allowable values for ***keyword*** are given below. For a particular **`ED-ASAP-PROF`** command, only those ***keyword*** parameters that correspond to the profile type ***pftype*** shall be used. If a parameter is not specified as part of the ***spec_block***, then its value remains unchanged. The values that are applicable to a specific parameter are indicated by footnotes at the end of this table. For example, ***psbyte*** has a footnote which indicates the allowable parameter values are: **CR, MJ, MN, NA,** and **NR**.

Table 3-27 `ED-ASAP-PROF` Input Parameters (Sheet 3 of 9)

Parameter Name	Description			
	The column identified below as **Initial** indicates the parameter's value when the profile is created by the **`ENT-ASAP-PROF`** command. This corresponds to the value the parameter has in the profile named "Default."			
pftype	**Keyword**	**Description**	**Value**	**Initial**
Any Type	***newname***	Starting in Release 2, the ***newname*** parameter is used to change the name of a profile. The profile that will have its name changed is identified by the input parameters ***pftype, pfname****.* Specifying a value for the ***newname*** parameter causes ***pfname*** = ***newname***. The name of the default profile cannot be changed.	#	
APS				
	fop	APS Failure of Protocol (starting in Release 1) This APS parameter applies to 1+1 optical protection groups. All other APS parameters apply only to 1xNOPT.	*	**MJ**
BLSR		Note 1: In some releases, the description may include BLSR at the beginning of the string.		
	blsrinaps	Inconsistent APS Codes (note 1)	*	**MJ**
	blsrimaps	Improper APS Codes (note 1)	*	**MJ**
	blsrdkb	Default K-bytes (note 1)	*	**MJ**
	blsrts	Traffic Squelched (note 1)	*	**MJ**
	rsmi	Ring Squelch Map Inconsistent	*	**MN**
	rsmc	Local Squelch Map Conflict	*	**MN**
	rinc	Ring Incomplete	*	**MJ**
	ropn	Ring Open	*	**MJ**
	nidm	Node ID Mismatch	*	**MJ**
	dprn	Duplicate Ring Node	*	**MJ**

Table 3-27 **`ED-ASAP-PROF`** Input Parameters (Sheet 4 of 9)

Parameter Name	Description			
	urt	Unknown Ring Type (starting in Release 1)	*	**NA**
	irpm	Inconsistent Ring Prot Mode (starting in Release 1)	*	**MJ**
	cable	E/W Cable Error (starting in Release 1)	*	**MJ**
	rdip	Ring Discovery in Progress	*	**NA**
	rsip	Ring Startup in Progress	*	**MJ**
	nut_nopr	Local NUT Not Operational (starting in Release 4)	*	**NA**
	nut_inxcgrn	NUT Inconsistent XC Granularity (starting in Release 4)	*	**NA**
	nut_dsbld	NUT Disabled (starting in Release 4)	*	**NA**
	nut_tmpprv	Temporary NUT Provisioned (starting in Release 4)	*	**NA**
	etp	Extra Traffic Preempted	*	**NA**
	rpss	Ring Prot Switching Suspended (starting in Release 2)	*	**MJ**
	las	Line Automatic Switch (starting in Release 3)	*	**MJ**
DRIPATH				
	psact	Path Switch Active	*	**NR**
	psfail	Path Switch Failure	*	**NA**
	psinh	Path Switch Inhibited	*	**NA**
ENET				
	sa_lanlos ***nsa_lanlos***	Loss of Signal	*	**CR** **NR**
	sa_lananm ***nsa_lananm***	Auto Negotiation Mismatch	*	**MJ** **NR**
	sa_loa ***nsa_loa***	Loss of Alignment	*	**CR** **NR**

Table 3-27 **ED-ASAP-PROF** Input Parameters (Sheet 5 of 9)

Parameter Name	Description			
	sa_gfplof ***nsa_gfplof***	Loss of Frame Delineation	*	**CR** **NR**
	sa_vcgsf ***nsa_vcgsf***	VCG Signal Fail	*	**NR** **NR**
	sa_clopc ***nsa_clopc***	Loss of Partial Capacity	*	**CR** **NR**
	sa_clotc ***nsa_clotc***	Loss of Total Capacity	*	**CR** **NR**
	sa_cfopr ***nsa_cfopr***	Failure of Protocol Rx	*	**CR** **NR**
	sa_cfopt ***nsa_cfopt***	Failure of Protocol Tx	*	**CR** **NR**
ENV				
	MISC_INn (n=1-16}	miscellaneous discrete inputs (starting in Release 3)	*	**NR**
EQPT				
	sa_cpfail ***nsa_cpfail***	service/nonservice-affecting Circuit Pack Failure	*	**CR** **MN**
	sa_cpuneq ***nsa_cpuneq***	Circuit Pack Unequipped/Missing	*	**CR** **MN**
	sa_mcpuneq ***nsa_mcpuneq***	Mate Circuit Pack Unequipped (starting in Release 1)	*	**-** **MN**
	sa_cpinv ***nsa_cpinv***	Circuit Pack Invalid	*	**-** **MN**
	sa_nvmw ***nsa_nvmw***	Non-Volatile Memory Wearout	*	**-** **MN**
	sa_als ***nsa_als***	Automatic Laser Shutdown	*	**CR** **MN**
	sa_fan ***nsa_fan***	Fan Failure	*	**CR** **MN**
	sa_fuse ***nsa_fuse***	Power/Fuse Failure	*	**CR** **MN**
	sa_rsrcusg ***nsa_rsrcusg***	Resource Usage (starting in Release 2)	*	**MJ** **MN**

Table 3-27 **ED-ASAP-PROF** Input Parameters (Sheet 6 of 9)

Parameter Name	Description			
	sa_mmis ***nsa_mmis***	Memory Mismatch (starting in Release 2)	*	**MJ** **MN**
	sa_nvmusg ***nsa_nvmusg***	Non-Volatile Memory Usage (starting in Release 2)	*	**MJ** **MN**
	sa_dccpr ***nsa_dccpr***	DCC Partition Repair (starting in Release 3)	*	**-** **MN**
	sa_dccto ***nsa_dccto***	DCC Tunnel Overflow (starting in Release 3)	*	**-** **MN**
PT				
	lop	Loss of Pointer - Path	*	**CR**
	ais	Alarm Indication Signal - Path	*	**CR**
	ber	Bit Error/Signal Degrade - Path	*	**NR**
	uneq	STS Path Unequip	*	**CR**
	rfi	Remote Failure Indication - Path	*	**NR**
	plm	STS Payload Label Mismatch	*	**CR**
	lom	Loss of Multiframe	*	**CR**
	sqm	Sequence Number Mismatch	*	**CR**
PTSDH				
	hpf_lop	HP Loss of Pointer	*	**CR**
	hpf_ssf	HP Server Signal Failure	*	**CR**
	hpf_plm	HP Payload Label Mismatch	*	**CR**
	hpf_rdi	HP Remote Defect Indication	*	**NR**
	hpf_deg	HP Signal Degrade	*	**NR**
	hpf_tim	HP Trace Identifier Mismatch	*	**CR**
	hpf_uneq	HP Unequip	*	**CR**
	hpf_lom	Loss of Multiframe	*	**CR**
	hpf_sqm	Sequence Number Mismatch	*	**CR**
SDH				

Table 3-27 **`ED-ASAP-PROF`** Input Parameters (Sheet 7 of 9)

Parameter Name	Description			
	sa_stmf_los ***nsa_stmf_los***	service-affecting STM Loss of Signal nonservice-affecting STM Loss of Signal	*	**CR** **MN**
	sa_plos ***nsa_plos***	Pulsed Loss of Signal	*	**CR** **MN**
	sa_rsf_lof ***nsa_rsf_lof***	STM Loss of Frame	*	**CR** **MN**
	sa_msf_ais ***nsa_msf_ais***	MSect Alarm Indication Signal	*	**NR** **NR**
	sa_msf_rdi ***nsa_msf_rdi***	MSect Remote Failure Indication	*	**NR** **NR**
	sa_msf_exc ***nsa_msf_exc***	MSect Excessive Error	*	**CR** **MN**
	sa_msf_deg ***nsa_msf_deg***	MSect Signal Degrade	*	**MJ** **MN**
	sa_msf_ssf ***nsa_msf_ssf***	MSect Server Signal Failure	*	**NR** **NR**
	sa_dccrs ***nsa_dccrs***	DCC RSect Failure	*	**-** **MN**
	sa_dccms ***nsa_dccms***	DCC MSect Failure (starting in Release 1)	*	**-** **MN**
	sa_lidrsmm ***nsa_lidrsmm***	LinkID RSect Mismatch	*	**-** **MN**
	sa_lidmsmm ***nsa_lidmsmm***	LinkID MSect Mismatch (starting in Release 1)	*	**-** **MN**
	sa_unsrs ***nsa_unsrs***	User-Network Side RSect Failure	*	**-** **MN**
	sa_unsms ***nsa_unsms***	User-Network Side MSect Failure (starting in Release 1)	*	**-** **MN**
		The parameters ***sa_dccrsdu*** and ***nsa_dccrsdu*** are replaced in Release 1 by ***dccrsdu***, SYS ASAP.		

Table 3-27 **`ED-ASAP-PROF`** **Input Parameters (Sheet 8 of 9)**

Parameter Name	Description			
		The parameters ***sa_dccmsdu*** and ***nsa_dccmsdu*** are replaced in Release 1 by ***dccmsdu***, SYS ASAP.		
SYS				
	arst	Autonomous Reset	**	**NA**
	swerr	Software Error	**	**NA**
	omerr	Out of Memory Error	**	**NA**
	ferr	File Error	**	**NA**
	adbf	Auto Database Backup Failure	**	**NA**
	stqlc	System Timing Quality Level Chg	**	**NA**
	almtst	Alarm Test	**	**NR**
	dccrsdu	DCC RSect Disabled-Unavailable (starting in Release 1)	**	**NA**
	dcctypm	DCC Type Mismatch (starting in Release 1)	**	**NA**
TIMING				
	syncref	Sync Reference Failure (external reference)	*	**MJ**
	holdover	System Clock Holdover	*	**MN**
	linesync	Line Sync Reference Failure (starting in Release 1)	*	**NR**
	clkoutq	ClkOut Quality Failure (starting in Release 3)	*	**MN**
TRIBSDH				
	sa_auf_lop ***nsa_auf_lop***	sa AU Loss of Pointer nsa AU Loss of Pointer	*	**CR** **NR**
	sa_auf_ais ***nsa_auf_ais***	AU Alarm Indication Signal	*	**NR** **NR**
	sa_hpf_rdi ***nsa_hpf_rdi***	HP Remote Defect Indication	*	**NR** **NR**

Table 3-27 **`ED-ASAP-PROF`** Input Parameters (Sheet 9 of 9)

Parameter Name	Description			
	sa_hpf_uneq ***nsa_hpf_uneq***	HP Unequip	*	**CR** **NR**
	sa_hpf_exc ***nsa_hpf_exc***	HP Excessive Error	*	**NR** **NR**
	sa_hpf_deg ***nsa_hpf_deg***	HP Signal Degrade	*	**NR** **NR**
	sa_auf_srm ***nsa_auf_srm***	AU Signal Rate Mismatch (starting in Release 2)	*	**MJ** **NR**

***** Allowable parameter values are: **CR, MJ, MN, NA,** and **NR**.

****** A transient alarm (not a standing condition). The allowable parameters are **NA** and **NR**.

Alphanumeric character string with a maximum of 24 characters.

`ED-ASAP-PROF` cannot be used to change the name of an active profile.

A profile is defined to be *active* if it has been assigned to any network entity, for example, to an OC-3 port.

To change the name of an active profile:

1. Create a new profile with the proper name (using **`ENT-ASAP-PROF`**)
2. Change the parameter values as necessary (using **`ED-ASAP-PROF`**)
3. Assign the new profile to the entities (for example, using **`ED-rr`**)
4. Delete the previous profile (using **`DLT-ASAP-PROF`**).

If this approach is not possible because the allowable number of profiles would be exceeded,

1. Temporarily assign the “Default” profile to the entities that are using the active profile
2. Use **`ED-ASAP-PROF`** to change the profile's name
3. Reassign the profile to the entities.

OUTPUT FORMAT

If the network element fully complies with the **ED-ASAP-PROF** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example modifies a **SONET** profile that is named sam:

```
ED-ASAP-PROF:LT-WBM::123456::sonet,sam:sa_los=MJ,sa_lof=MJ,sa_eber=MJ;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **ED-ASAP-PROF** command. The following additional error response(s) are applicable:

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **INPUT, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response (for a specific product release, some of these conditions might not be applicable):

- The ***pfname*** parameter specified is not valid.

The **INPUT, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- An invalid ***pftype*** parameter is specified.

The **Status, Data Not Consistent** error response is shown below:

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

The following list identifies conditions that will cause an SDNC error response (for a specific product release, some of these conditions might not be applicable):

- The ***pfname*** parameter does not exist.
- A profile parameter does not exist for a correctly specified type of profile.

The **Input, Data Not Consistent** error response is shown below:

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

The following list identifies conditions that will cause an IDNC error response (for a specific product release, some of these conditions might not be applicable):

- A new profile name is specified for the default profile.
- An ASAP parameter value has severity level inconsistency (for example, the nonservice-affecting value of a parameter is CR and the service-affecting value is MJ).

The **Input, Entity Already Exists** error response is shown below:

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

The following condition will cause an IEAE error response (for a specific product release, some of these conditions might not be applicable):

- The new profile name already exists for the specified profile type.

RELATED TL1 MESSAGES

DLT-ASAP-PROF

ENT-ASAP-PROF

RTRV-ASAP-PROF

NAME

`ED-CRS:` Edit Cross Connection

The **`ED-CRS`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

Starting with Release 1, the syntax is:

`ED-CRS``-`*`modifier`*`:`*`tid`*`:`*`in_aid`*`,`*`out_aid`*`:`*`ctag`*`:::`*`spec_block`*`;`

DESCRIPTION

The **`ED-CRS`** command can be initiated by a user to modify cross-connection parameters of an existing cross connection in the network element on a per leg basis.

The **`ED-CRS`** command generates a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-28 **`ED-CRS`** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the edit cross-connection command is to act. Values: ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1)

Table 3-28 **`ED-CRS`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **VC416C** (starting in Release 2).
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
in_aid	Input Access Identifier. See the AID table in OSEG Appendix A. Value(s): logical tributary AID. Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
out_aid	Output Access Identifier. See the AID table in OSEG Appendix A. Value(s): logical tributary AID. Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-29 **`ED-CRS`** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
loca	Specifies the new source ***tid*** associated with ***in_aid***. This parameter is applicable to BLSR connections only. If the value is omitted, the current value is not modified. Value(s): See ***tid*** in the **`RTRV-HDR`** command. Starting in Release 2.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
locz	Specifies the new destination ***tid*** associated with ***out_aid***.This parameter is applicable to BLSR connections only. Value(s): See ***loca***.

Table 3-29 **`ED-CRS`** Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
omode	OMODE. Specifies the new output mode. Values: ■ **NORM** ■ **IDLE/UNEQ** ■ **AIS**. If the value is omitted, the current value is not modified. Note: Output mode IDLE is for DS3 tributaries and UNEQ is for tributaries from SONET/SDH interfaces.
xcappl	Application indicates one of the applications that are supported by compound cross-connection topologies. Values: **0**-**255**.
xcnum	Cross-Connection Number identifies each cross-connection leg in a specific compound cross connection. Any nine digit number is acceptable. Recommended format of the nine digits are allocated as follows: two digits for the bay, one digit for the shelf, two digits for the slot, one digit for the port, and three digits for the trib.The default value is 000000000.

OUTPUT FORMAT

If the **`ED-CRS`** request completes successfully, the following normal completion response is returned:

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

The network element returns a successful completion response to an **`ED-CRS`** command if none of the value(s) of the existing cross-connection is being modified by the **`ED-CRS`** command.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of **ED-CRS** command by the network element. The example below modifies destination ***tid*** values of an existing VC3 BLSR cross-connection:

```
ED-CRS-VC3:LT-WBM-789:4-2-#-#-02-2-1,4-2-#-#-08-1-7:123456:::LOCZ=LT-
WBM-456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **ED-CRS** command. The following additional error responses are also applicable.

The **INPUT, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response:

- A source or destination TID is specified for a tributary that is not part of a BLSR or MSSPRING port protection group.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following list identifies conditions that will cause an IENE error response:

- The logical tributary does not exist.

- The specified cross-connection does not exist.

The **INPUT, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The specified rate is not equivalent to the rate of the existing cross-connection.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- Modification of a cross-connection from a tributary used in a test access connection.
- Modification of a cross-connection from a tributary used in a loopback connection.

RELATED TL1 MESSAGES

DLT-CRS

ENT-CRS

RTRV-CRS

NAME

ED-DAT: Edit Date and Time

The **ED-DAT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

The **ED-DAT** command can be initiated by a user to change the date and time information in the network element.

The **ED-DAT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-30 **ED-DAT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
date	The date specifies the current date as YY-MM-DD. Value(s): Refer to the **RTRV-HDR** command for more information. If the parameter ***time*** is not specified, the current value is not changed, but ***date*** must be specified for the **ED-DAT** command to complete successfully.

Table 3-30 **ED-DAT** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
time	The time specifies the current time of day as HH-MM-SS. Values: {**00**-**23**}-{**00**-**59**}-{**00**-**59**}. If the parameter ***date*** is not specified, the current value is not changed, but ***time*** must be specified for the **ED-DAT** command to complete successfully.

OUTPUT FORMAT

If the **ED-DAT** 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 the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful modification of the date and time in the network element:

```
ED-DAT:LT-WBM-789::123456::01-12-31,11-50-30;

   LT-WBM-789 01-12-31 11:51:41
M  123456 COMPLD
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

RTRV-HDR

NAME

ED-EPORT: Edit Ethernet Port

The **ED-EPORT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-EPORT-*modifier*:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ED-EPORT** command modifies the properties of an Ethernet port.

General Description of VCG and ethernet TL1 commands

Parameters that describe either ethernet or VCG signals, are modified via the **ED-EPORT** and **ED-VCG** commands respectively. For both commands, the alarm levels for the incoming customer signals are described by an Ethernet Alarm Severity Assignment Profile (type ENET).

The ethernet port signals and the VCG signals and are processed into VCG tributaries which can be cross connected like other tributaries. The alarm levels for the VCG tributaries are described by a Path Terminating Alarm Severity Assignment Profile (type PT or PTSDH). Properties of VCG tributaries can be modified by the **ED-VCGTRIB** command.

RTRV-EPORT, **RTRV-VCG**, and **RTRV-VCGTRIB** can be used to retrieve parameter values. **RTRV-VLAN** retrieves the attributes of one or more VLANs (virtual LAN) which are embedded in the VCG or ethernet signals.

The **ED-EPORT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-31 **ED-EPORT** Input Parameters

Parameter Name	Description
modifier	Modifier. This parameter is available starting in Release 3. Value(s): ■ **1GE**
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 3. Value(s): Ethernet port AID. See the AID table in OSEG Appendix A. An “all” AID range is allowed up to the shelf level.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-32 **ED-EPORT** Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
addvlan	Valid VLAN Add List. This parameter is available starting in Release 3. Either the ***addvlan*** or ***delvlan*** parameters can be specified in the command line, but not both. Value(s): An ampersand (&) separated list of VLAN identifiers or VLAN ranges. A VLAN identifier is an integer with value **1**-**4093**. A VLAN range is denoted with two VLAN identifiers separated by a double-ampersand (&&); for example, 1&&3 means 1, 2 and 3. Single and double ampersands can be combined; for example, 1&3&&5&7 means 1, 3, 4, 5, and 7. The initial value is an empty list.

Table 3-32 **ED-EPORT** Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
delvlan	Valid VLAN Delete List. This parameter is available starting in Release 3. Either the ***addvlan*** or ***delvlan*** parameters can be specified in the command line, but not both. Value(s): An ampersand (&) separated list of VLAN identifiers or VLAN ranges. A VLAN identifier is an integer with value **1**-**4093**. A VLAN range is denoted with two VLAN identifiers separated by a double-ampersand (&&); for example, 1&&3 means 1, 2 and 3. Single and double ampersands can be combined; for example, 1&3&&5&7 means 1, 3, 4, 5, and 7. The initial value is an empty list.
dftpri	Default Priority. This parameter is available starting in Release 3. Values: ■ **NA** (initial value) ■ **HIGH** ■ **LOW**
dftvlan	Default VLAN Identifier. This parameter is available starting in Release 3. Value(s): An integer in the range **1**-**4093**, or **0**. A **0** value means that the user does not want a default value to be set.
enetpn	Ethernet Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Value(s): Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 3. Value(s): Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
epmode	Ethernet Port Monitoring Mode. This parameter is available starting in Release 3. Values: ■ **MON** ■ **NMON** ■ **AUTO** (initial value)
eppm	Ethernet Port PM Enable. This parameter is available starting in Release 3. Values: ■ **ENABLE** ■ **DISABLE** (initial value)

Table 3-32 **ED-EPORT** Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
fcmd	Flow Control Mode. This parameter is available starting in Release 3. Values: ■ **DISABLE** ■ **AUTO** (initial value)
rptmode	Repeater Mode. (Promiscuous mode) This parameter is available starting in Release 4. Provisioning this parameter to ENABLE has the following effect: the ports VLAN list (*vvlan)* is cleared and the default VLAN identifier is set to zero (*dftvlan*). Values: ■ **ENABLE** ■ **DISABLE** (initial value)

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **ED-EPORT** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **ED-EPORT** command by the network element:

```
ED-EPORT-1GE:LT-WBM:1-1-#-#-01-1:123456:::epmode=NMON;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **ED-EPORT** command.

RELATED TL1 MESSAGES

ED-VCG

ED-VCGTRIB

RTRV-EPORT

RTRV-VCG

RTRV-VCGTRIB

RTRV-VLAN

NAME

ED-EQPT: Edit Equipment

The **ED-EQPT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.1

LOGIN PRIVILEGE

Beginning with Release 1.0, the user privilege code is
User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-EQPT:*tid*:*aid*:*ctag*::[*name*][,*qual*]:*spec_block*;

DESCRIPTION

The **ED-EQPT** command modifies the provisioning values associated with equipment. Shelves or circuit packs must first be created with the **ENT-EQPT** command before they can be modified.

The **ED-EQPT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-33 **ED-EQPT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 2.1. This parameter is the address of the equipment component to be modified. Value(s): ■ shelf AID

Table 3-33 **ED-EQPT** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ slot AID — The “all” keyword is allowed. ■ circuit pack AID — The “all” keyword is allowed.
ctag	Correlation Tag. Refer to **RTRV-HDR** command for the input parameter syntax and description of this parameter.
name	Circuit Pack Name. This parameter is available starting in Release 2.1. Value(s): See **ENT-EQPT** command for the values of circuit pack names. If the value of ***aid*** is a circuit pack AID range, ***name*** and ***qual*** define the circuit pack types that this command will affect within that range. In this case, both ***name*** and ***qual*** are required, except for circuit pack types that do not have a value for ***name***.
qual	Circuit Pack Qualifier. This parameter is available starting in Release 2.1. Value(s): See **ENT-EQPT** command for the values of circuit pack qualifiers. If the value of ***aid*** is a circuit pack AID range, ***name*** and ***qual*** define the circuit pack types that this command will affect. In this case, both ***name*** and ***qual*** are required, except for circuit pack types that do not have a value for ***name***.
spec_block	The following are the ***spec_block*** parameters.

Table 3-34 **ED-EQPT** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
eqptpn	Equipment ASAP Profile Name. This parameter is available starting in Release 3. The value is an alphanumeric string with a maximum of 24 characters. This parameter is allowed with a shelf AID. This parameter is allowed with a slot AID. This parameter is allowed with a circuit pack AID.
nvmname	Circuit Pack Name. This parameter is available starting in Release 3. This parameter is only allowed with a slot AID. Value(s): See the description of the ***nvmname*** parameter in the **ENT-EQPT** command.

Table 3-34 `ED-EQPT` Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
nvmqual	Circuit Pack Qualifier. This parameter is available starting in Release 3. This parameter is only allowed with a slot AID. Value(s): See the description of the ***nvmqual*** parameter in the **`ENT-EQPT`** command. If the ***nvmname*** and ***nvmqual*** parameters are issued, a new circuit pack is accepted in place of a previous one if the new circuit pack is exchangeable with the previous one, and the value of holdst is not VALID.

OUTPUT FORMAT

If the **`ED-EQPT`** command completes successfully, then 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** command section of the **`RTRV-HDR`** command**.**

EXAMPLE INPUT/OUTPUT

The following is an example of the **`ED-EQPT`** command:

```
ED-EQPT:LT-WBM:system:123456:::swsize=4608;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The error messages listed there also apply to the **ED-EQPT** command.

The **INPUT, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response:

- Illegal Pproc Port ID in this Configuration
- Config is not NULL
- Illegal Value
- Illegal Bay ID Syntax
- Bad BSW Port ID
- CP parameter not Modifiable

The **Status failure, incorrect equipage** error response is shown below:

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

The following list identifies conditions that will cause an EATN error response:

- Unrecognized CP for this Slot
- Illegal Port Mode Value.

The **Status, Not in Valid State** error message is shown below:

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

The following list identifies conditions that will cause an SNVS error response:

- Not in MCOND

RELATED TL1 MESSAGES

DLT-EQPT

ED-STATE-EQPT

ENT-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ED-IP-TUNNEL: Edit IP Tunnel

The **ED-IP-TUNNEL** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-IP-TUNNEL:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ED-IP-TUNNEL** command provisions the IP-Tunneling service. The **ED-IP-TUNNEL** command is used to set the IP tunnel status, the TAP parameters learning status, the advertising status, and the TAP group number.

The **ED-IP-TUNNEL** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-35 **ED-IP-TUNNEL** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Value(s): datacom AID (DCC circuit pack AID. See AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-36 `ED-IP-TUNNEL` Input *spec_block* Parameters

Parameter Name	Description
	The status of the IP tunneling feature is controlled with these parameters.
tadverstat	TAP_ADVERTISE_STATUS. This parameter controls the advertising status for the auto provisioning protocol. This parameter overrules all the individual tap_advertise. Values: ■ **ENABLE** ■ **DISABLE** (Default).
tapgroup	TAP_GROUP. This parameter defines the TAP group to which the system belongs. Values: ■ **0** … **65535**. The default value is **0**.
tlearnstat	TAP_LEARN_STATUS. This parameter controls the learning status for the auto provisioning protocol. Values: ■ **ENABLE** ■ **DISABLE** (Default).

OUTPUT FORMAT

After receiving the **`ED-IP-TUNNEL`** command, 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** command section of the **`RTRV-HDR`** command.

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-IP-TUNNEL** command:

```
ED-IP-TUNNEL:LT-WBM:1-1-#-#-dcc-cp:123456:::
tlearnstat=ENABLE,tadverstat=ENABLE,tapgroup=25;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The error messages listed there also apply to the **ED-IP-TUNNEL** command.

RELATED TL1 MESSAGES

DLT-IP-ROUTE

ENT-IP-ROUTE

RTRV-IP-ROUTE

RTRV-IP-TUNNEL

NAME

ED-NE: Edit network element

The **ED-NE** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-NE:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

The **ED-NE** command modifies attributes associated with the network element at the system level but not associated with any particular facility or equipment unit.

The **ED-NE** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-37 **ED-NE** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-38 **ED-NE** Input *spec_block* Parameters

Parameter Name	Description
tl1tcpipgw	This parameter is available starting with Release 4. It enables or disables the TCP/IP Gateway application which allows a pure TCP/IP to OSI conversion. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
tunstat	IP_TUNNEL_STATUS. This parameter enables or disables the IP tunneling application which allows IP packages to be transported transparently through the OSI network. Values: ■ **DISABLE** (initial value) ■ **ENABLE**.

OUTPUT FORMAT

If the **ED-NE** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-NE** command:

```
ED-NE:LT-WBM::123456:::duara=DISABLE;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The requirements listed there also apply to the **ED-NE** command.

RELATED TL1 MESSAGES

RTRV-NE

NAME

ED-NE-SECU: Edit network element Security

The **ED-NE-SECU** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

Beginning in Release 1.0, the syntax is:

ED-NE-SECU:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

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

The **ED-NE-SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-39 **ED-NE-SECU** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-40 `ED-NE-SECU` Input *spec_block* Parameters

Parameter Name	Description
intrvl	Lockout Period. This parameter is available starting in Release 1. The time during which login attempts using that ***uid*** will not be allowed. This occurs when the number of consecutive invalid login attempts by a ***uid*** reaches ***thrshld***. When ***intrvl*** expires, login attempts will again be allowed from that ***uid***. If this parameter is set to **0** (zero), the lockout feature is disabled. If the parameter is not specified, it retains its current value. Initial value is **10**. Values (in minutes): **0**-**99**.
thrshld	Lockout Threshold. The maximum number of consecutive invalid login attempts that are allowed by a ***uid***. If the count of invalid login attempts is equal to the threshold, the ***uid*** is locked out for ***intrvl*** period of time. If a login attempt is successful, the count of invalid login attempts by that ***uid*** is reset to zero. If the parameter is not specified, it retains its current value. The initial value is **5**. Values: **2**-**99**.
usrage	User ID Aging Period. This parameter is available beginning in Release 2.1. If a ***uid*** has not been used during this time interval, it will be disabled. User ID aging does not apply to the superuser logins. Values (in days): **0**-**999**. The initial value is **10**. A value of **0** disables user ID aging.

OUTPUT FORMAT

If the **`ED-NE-SECU`** command is successful, the network element returns the following completed response:

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **`ED-NE-SECU`** command by the network element:

```
ED-NE-SECU:LT-WBM-789::123456:::THRSHLD=5,INTRVL=2;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there apply to the **`ED-NE-SECU`** command.

RELATED TL1 MESSAGES

`ACT-USER`

`RTRV-NE-SECU`

NAME

ED-PID: Edit Password Identifier

The **ED-PID** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

ED-PID:*tid*::*ctag*::*old_pid*,*new_pid*;

DESCRIPTION

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

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

- The user is currently logged in on the network element.
- The ***old_pid*** provided matches the current password for that login identifier.
- The ***new_pid*** provided satisfies the password requirements of the network element.

The **ED-PID** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-41 **`ED-PID`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for input parameter syntax and description of this parameter.
old_pid	Old Password Identifier. This is the current ***pid*** of the user. Refer to the **`ACT-USER`** command.
new_pid	New Password Identifier. Password strings are transmitted in unencrypted form in the **`ED-PID`** command; are encrypted when stored in the network element; and are never transmitted from the network element. The ***new_pid*** value must differ from the ***old_pid*** value by at least one character. Refer to the **`ACT-USER`** command.

OUTPUT FORMAT

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

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

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

Starting in Release 4.0, 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
   "uid:lastdate,lasttime,attempts,systype,release,upc"
;
```

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a successful password change operation:

```
ED-PID:LT-WBM-789::123456::soup3r+,mash%52;

   LT-WBM-789 98-01-01 08:00:00
M  123456 COMPLD
;
```

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

```
ED-PID:LT-WBM-789::123456::soup3r+,mash%52;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   ”mvdlm5:97-12-31,09-00-00,1,WaveStar_BandWidth_Manager,1.1.13,S1”
   /* Lucent Technologies WaveStar_BandWidth_Manager Release 1.1.13
   User Privilege Code: S1
   LUCENT TECHNOLOGIES - PROPRIETARY
   THIS SOFTWARE CONTAINS INFORMATION OF LUCENT TECHNOLOGIES
   AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE
   WITH APPLICABLE AGREEMENTS.
   NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.
   USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY
   AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN
   LUCENT TECHNOLOGIES AND CUSTOMER.
   UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
   */
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ACT-USER

CANC-USER

CANC-USER-SECU

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

NAME

ED-PROTN-ACC: Edit Protection Access

The **ED-PROTN-ACC** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

ED-PROTN-ACC:*tid*:*aid*:*ctag*::*protype*:*spec_block*;

DESCRIPTION

The **ED-PROTN-ACC** command modifies the NUT (non-preemptible unprotected traffic) attribute of tributary in a protection group that was created by **ENT-PROTN-GRP**. See the **ENT-PROTN-GRP** command for a description of protection groups.

The **ED-PROTN-ACC** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-42 **ED-PROTN-ACC** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. For each protection group type, **aid** must be a **protection group AID**. See ***protype*** for a list of the protection group types.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-42 **`ED-PROTN-ACC`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
protype	Protection Type. Values: ■ **2F** (starting in Release 4)
spec_block	For this command all spec_block parameters are mandatory. See the following "**`ED-PROTN-ACC`** ***spec_block*** Parameters" table.

Table 3-43 **`ED-PROTN-ACC`** ***spec_block*** Parameters (Sheet 1 of 2)

Parameter	Description/PROTYPE	Value
nutatr	This is the protection attribute of the addressed timeslot.	Values: ■ **PROT** protected ■ **NOTPR** not protected ■ **TNOTP** temp not protected The default value is **PROT**.
nutrate	This is the rate of the concatenated group of timeslots for which the accompanied ***nutatr*** parameter is valid. The ***nutrate*** parameter imposes constraints on the use of timeslots and posistions: — STS1,VC3any timeslot — STS3,VC4only timeslots corresponding to positions #3n+1 (n=[0-63]) — STS12,VC44c #12n+1 (n=[0-15]) — STS48,VC416c #48n+1 (n=[0-3])	Values: ■ **STS1** (default) ■ **STS3** ■ **STS12** ■ **STS48** ■ **VC3** ■ **VC4** ■ **VC44c** ■ **VC416c**
timeslot	Timeslot number for which the attribute is set.	Values:

Table 3-43 ED-PROTN-ACC *spec_block* Parameters (Sheet 2 of 2)

Parameter	Description/PROTYPE	Value
		■ **1** … **96** for protype **2F**

OUTPUT FORMAT

If the network element fully complies with the **ED-PROTN-ACC** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example sets the non-preemptible unprotected traffic attribute of a 2F BLSR protection group's timeslot 12:

```
ED-PROTN-ACC:LT-WBM:1-1-t11:123456::2F:nutatr=PROT,nutrate=STS1,
timeslot=12;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-PROTN-GRP** command.

RELATED TL1 MESSAGES

RTRV-PROTN-ACC

NAME

ED-PROTN-GRP: Edit Protection Group

The **ED-PROTN-GRP** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

ED-PROTN-GRP:*tid*:[*aid*]:*ctag*::*protype*,[*rid*]:*spec_block*;

Starting in Release 2.1, **ED-PROTN-GRP** has the following input format:

ED-PROTN-GRP:*tid*:[*aid*]:*ctag*::*protype*,[*rid*],[*ppgname*]:
spec_block;

DESCRIPTION

The **ED-PROTN-GRP** command modifies a protection group that was created by **ENT-PROTN-GRP**. See the **ENT-PROTN-GRP** command for a description of protection groups.

ED-PROTN-GRP can also be used to modify protection groups that are not created by **ENT-PROTN-GRP**, but are created as part of system startup or circuit pack initialization. For example, it can modify a 1xN equipment protection group.

ED-PROTN-GRP does not provide complete flexibility for modifying a protection group. In some cases, it may be necessary to delete an existing group and then create a new one. For example, most AID parameters that are used to specify the protection group cannot be edited.

The **ED-PROTN-GRP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-44 **`ED-PROTN-GRP`** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. If ***rid*** is specified, then ***aid*** can be omitted. The use of **all** in the AID is not allowed for the **`ED-PROTN-GRP`** command. For each protection group type, ***aid*** can be a protection group AID. See ***protype*** for a list of the protection group types. For some protection groups, ***aid*** is not constrained to be a protection group AID. In this case, the protection group associated with the AID will be accessed. **Non-protection group AIDs can be specified for the following types:** ■ **1+1**: port AID (starting in Release 1) ■ **2F**: port AID (starting in Release 1) ■ **1xNOPT**: port AID (starting in Release 3) ■ **PATHDRI:** input tributary AID (starting in Release 2.1). Input tributary AID is only allowed if a ***ppgname*** is supplied as well. But AID is optional if ***ppgname*** is supplied.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ppgname	Path Protection Group Name (starting in Release 2.1). This parameter can only be specified for path protection groups. If ***protype*** is not equal to **PATHDRI**, then the command will be DENY'd with IDNV. If an input value is specified for ***ppgname*** and none is specified for ***aid,*** then **`ED-PROTN-GRP`** operates on all protection groups that have the specified path protection group name. If input values are specified for ***aid*** and ***ppgname***, then **`ED-PROTN-GRP`** operates on all protection groups that have the specified ***aid, ppgname*** pair. The command will be DENY'd with IDNV if there is no protection group described by ***aid***, ***ppgname***.

Table 3-44 **`ED-PROTN-GRP`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	Storage and retrieval of the ***ppgname*** is case sensitive, but actual use of the ***ppgname*** to determine the corresponding protection group is case insensitive. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. This parameter must be included in quotes. The value of ***ppgname*** is set when **`ENT-CRS`** is used to establish the connections for the path protection group.
protype	Protection Type. Values: ■ **1+1** (starting in Release 1) ■ **2F** (starting in Release 1) ■ **1xNOPT** (starting in Release 3) ■ **PATHDRI** (starting in Release 1) ■ **1xNELEC**.
rid	Ring Identification Name. Storage and retrieval of the ***rid*** is case sensitive, but actual use of the ***rid*** to determine the corresponding protection group is case insensitive. Value: ASCII string of up to 15 characters from the TID character set. If this parameter is specified, then the command will operate on the protection group associated with that ring ID. If ***aid*** is specified, then ***rid*** can be omitted. This parameter is applicable for the following ***protype*** values: ■ **2F** (starting in Release 1) Starting in Release 3.0, the value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
spec_block	See the following "**`ED-PROTN-GRP`** ***spec_block*** Parameters" table.

Table 3-45 **`ED-PROTN-GRP`** ***spec_block*** Parameters (Sheet 1 of 5)

Parameter	Description/PROTYPE	Value
apspn	APS protection switch profile name. This parameter is applicable to the following ***protypes***:	

Table 3-45 **`ED-PROTN-GRP`** ***spec_block*** Parameters (Sheet 2 of 5)

Parameter	Description/PROTYPE	Value
	■ **1+1** (starting in Release 3). ■ **1xNOPT** (starting in Release 3)	profile name profile name
blsrpn	BLSR protection switch profile name. This parameter is applicable to the following ***protypes***: ■ **2F** (starting in Release 3)	 profile name
dcclm-sprotmd	DCC line/MS protection mode. Starting in Release 3, this parameter is applicable to the following ***protype(s)***: ■ **1+1** (starting in Release 3). ■ **1xNOPT (**starting in Release 3)	**DISABLE** is the initial value. **ENABLE**, **DISABLE** **ENABLE**, **DISABLE**
dccsr-sprotmd	DCC Sect/RS protection mode. Starting in Release 3, this parameter is applicable to the following ***protype(s)***: ■ **1+1** (starting in Release 3). ■ **1xNOPT** (starting in Release 3)	**DISABLE** is the initial value. **ENABLE**, **DISABLE** **ENABLE**, **DISABLE**
dripathpn	DRI/Path protection switch profile name. This parameter is applicable to the following ***protype(s)***: ■ **PATHDRI** (starting in Release 3).	 profile name
hte	Holdoff Timer Enable. This parameter is applicable to the following ***protype(s)***: ■ **PATHDRI** (starting in Release 2.1).	The initial value is determined by the value of ***ppbv*** as set via **`ENT-CRS`**. **ENABLE**, **DISABLE**
htmr	Holdoff. This parameter is applicable to the following ***protype(s)***: ■ **1+1** (starting in Release 3)	 **0**-**100** (units are deci-seconds, or one-tenth of a second). **0** is the initial value. For example, a value of 55 means 5.5 seconds. The maximum value is 100 which means 10.0 seconds.

Table 3-45 `ED-PROTN-GRP` *spec_block* Parameters (Sheet 3 of 5)

Parameter	Description/PROTYPE	Value
	■ **1xNOPT** (starting in Release 3)	**0**-**100** (units are deci-seconds, or one-tenth of a second). **0** is the initial value. For example, a value of 55 means 5.5 seconds. The maximum value is 100 which means 10.0 seconds.
newppg-name	Path Protection Group Identification Name (starting in Release 2.1). The value assigned to ***newppgname*** replaces the path protection group's previous name. Storage and retrieval of the PPG name is case sensitive, but actual use of the PPG name to determine the corresponding protection group is case insensitive. The protection group(s) to which ***newppgname*** is assigned is specified by ***aid, ppgname***. In the **`REPT DBCHG`** message that is generated for this parameter, only the current value of ***ppgname*** is returned regardless of whether or not the **`ED-PROTN-GRP`** inputted a ***newppgname***. This parameter is applicable to the following ***protype(s)***:	If the value is omitted, the current value is not modified.
	■ **PATHDRI**.	An alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes.

Table 3-45 **`ED-PROTN-GRP`** ***spec_block*** Parameters (Sheet 4 of 5)

Parameter	Description/PROTYPE	Value
newrid	Ring Identification Name. Storage and retrieval of the RID is case sensitive, but actual use of the RID to determine the corresponding protection group is case insensitive. The value assigned to ***newrid*** replaces the protection group's previous ring ID. The protection group to which ***newrid*** is assigned is the protection group specified by either ***aid*** or ***rid***. This parameter is applicable to the following ***protypes***:	If the value is omitted, the current value is not modified.
	■ **2F** (starting in Release 1)	ASCII string of up to 15 characters from the TID character set
	Starting in Release 2.0:	The value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
protocol	Protocol. 1+1 optical protection groups can have one of the following protocols: unidirectional (1+1_UNI), bidirectional (1+1_BIDIR), or optimized bidirectional (1+1_OPTM). One or more of these protocols may not be available for a specific product's release. This parameter is applicable to the following ***protype(s)***:	**1+1_UNI** is the initial value.
	■ **1+1** (starting in Release 1).	**1+1_UNI**, **1+1_BIDIR**
	■ **1+1** (starting in Release 2.1)	**1+1_OPTM**
	■ **1xNOPT** (starting in Release 3)	**1xN_UNI**, **1xN_BIDIR**
rme	Revertive Mode Enable. This parameter is applicable to the following ***protype(s)***:	
	■ **1+1** (starting in Release 1).	**ENABLE**, **DISABLE** The initial value is **DISABLE**.

Table 3-45 `ED-PROTN-GRP` *spec_block* Parameters (Sheet 5 of 5)

Parameter	Description/PROTYPE	Value
	■ **1xNOPT** (starting in Release 1). Only applicable when ***protocol*** is **1xN_BIR**.	**ENABLE**
	■ **PATHDRI** (starting in Release 2.1).	**ENABLE**, **DISABLE** The initial value is determined by the value of ***ppbv*** as set via **`ENT-CRS`**.
wtr	Wait to Restore. This parameter is applicable to the following ***protypes***: Starting in Release 4.0, the value **99** representing infinity is no longer supported.	**5** is the initial value.
	■ **1xNELEC**	**0**-**12** and **99** (which represents infinity). The units of ***wtr*** are minutes.
	■ **1+1** (***protocol***: 1+1_UNI, 1+1_BIDIR)	**0**-**60**. The units of ***wtr*** are minutes.
	■ **2F** (starting in Release 1)	**0**-**12** and **99**.
	■ **1xNOPT** (starting in Release 3)	**0**-**12** and **99**.
wtr	Wait to Rename. This parameter is applicable to the following ***protype(s)***:	**5** is the initial value.
	■ **1+1** (***protocol***: 1+1_OPTM)	**0**-**60**. The units of ***wtr*** are minutes.

OUTPUT FORMAT

If the network element fully complies with the **`ED-PROTN-GRP`** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example assigns a wait-to-restore time of 8 minutes to the protection group named 1-1-o11 which is of type 1+1:

```
ED-PROTN-GRP:LT-WBM:1-1-o11:123456::1+1:wtr=8;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example assigns a wait-to-restore time of 10 minutes to the four fiber protection group that is identified by ring id denver21. It also renames the ring id to dallas3:

```
ED-PROTN-GRP:LT-WBM::123456::4f,denver21:newrid=dallas3,wtr=10;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-PROTN-GRP** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- Addition of a port such that one of the SNVS reasons specified in **ENT-PROTN-GRP** would result.
- Deletion of a port such that one of the SNVS reasons specified in **DLT-PROTN-GRP** would result.
- Error in provisioning of 4-Fiber BLSR port protection group: changed from four port mode to two port mode and the remaining ports are not paired as ***eastwkg***, ***eastprotn***, or ***westwkg***, ***westprotn***.

RELATED TL1 MESSAGES

DLT-PROTN-GRP

ENT-PROTN-GRP

RTRV-PROTN-GRP

NAME

ED-PROTN-TYPE: Modify Protection Group Type

The **ED-PROTN-TYPE** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

ED-PROTN-TYPE:*tid*::*ctag*::*protype*:*spec_block*;

DESCRIPTION

The **ED-PROTN-TYPE** command modifies the parameters of a protection group type. A related command, **ED-PROTN-GRP**, can be used to change the parameters of a specific protection group. See the **ENT-PROTN-GRP** command for a description of protection groups. As an example of the use of **ED-PROTN-TYPE**, it can be used to change the “wait to restore time” for all protection groups of protection type **PATHDRI**.

The **ED-PROTN-TYPE** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-46 **ED-PROTN-TYPE** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-46 **ED-PROTN-TYPE** Input Parameters

Parameter Name	Description
protype	Protection Type. Value(s): ■ **PATHDRI**.
spec_block	The following are the ***spec_block*** parameters.

Table 3-47 **ED-PROTN-TYPE** Input *spec_block* Parameters

Parameter Name	Description
plwtr	Path Level Wait-To-Restore. This parameter is only applicable when ***protype*** is **PATHDRI**. ■ Values: **0**-**12** The default value is: **5** If the value is omitted, then the current value is not modified. The dimensions of ***plwtr*** are minutes.
plhtmr	Path Level Holdoff Timer. This parameter is only applicable when ***protype*** is **PATHDRI**. Values: ■ **0**-**100** (steps of 100 ms, implying 10 sec range).

OUTPUT FORMAT

If the **ED-PROTN-TYPE** request completes successfully, then 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 of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of an **ED-PROTN-TYPE** request by the network element:

```
ED-PROTN-TYPE:LT-WBM::123456::PATHDRI:plwtr=2;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ED-PROTN-TYPE** command.

RELATED TL1 MESSAGES

DLT-PROTN-GRP

ED-PROTN-GRP

OPR-PROTNSW

RLS-PROTNSW

RTRV-PROTN-GRP

RTRV-PROTN-TYPE

NAME

`ED-rr:` Edit rr

The **`ED-rr`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

Table 3-48 Syntax of **`ED-rr`**

Command Syntax
ED-STM1:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 1)
ED-STM1E:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 1)
ED-STM4:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 2)
ED-STM16:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 1)
ED-STM64:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 1)
ED-VC3:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 1)

DESCRIPTION

The **`ED-rr`** command can be used to provision all parameters related to optical and electrical ports. It also is used to provision tributary parameters. To provision the external input/output timing reference port, see the TL1 command **`SET-SYNCN`**.

The **`ED-rr`** command generates a **`REPT DBCHG`** message.

INPUT PARAMETERS

The table that follows describes the input parameters for **ED-STMn**. If the **rr** field is blank, then the row applies to all **ED-rr** commands.

Table 3-49 **ED-STMn** Input Parameters

rr	Parameter Name	Description
	tid	Target Identifier. Refer to **RTRV-HDR** command for input parameter syntax and description of this parameter.
STM1	***aid***	Access Identifier (starting in Release 1). Values: ■ port AID of an SDH port ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
STM1E	***aid***	See STM1 (starting in Release 1).
STM4	***aid***	See STM1 (starting in Release 2).
STM16	***aid***	See STM1 (starting in Release 1).
STM64	***aid***	See STM1 (starting in Release 1).
	ctag	Correlation Tag. Refer to **RTRV-HDR** command for input parameter syntax and description of this parameter.
	spec_block	The following are the ***spec_block*** parameters.

Table 3-50 **ED-STMn** Input *spec_block* Parameters (Sheet 1 of 11)

rr	Parameter Name	Description
STM64	***als***	Automatic Laser Shutdown (starting in Release 3). Enable/Disable the automatic laser shutdown procedure. ALS procedure switches off the laser during a fiber cut. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 2 of 11)

rr	Parameter Name	Description
STM1	***degthr***	Signal Degrade Threshold (starting in Release 2). This is less severe than ***dexcthr***, the excessive degrade threshold. Values (as exponents of 10): ■ **-5** ■ **-6** (initial value $\mathbf{10}^{-6}$) ■ **-7** ■ **-8** ■ **-9**.
STM1E	***degthr***	See STM1 (starting in Release 2).
STM4	***degthr***	See STM1 (starting in Release 2).
STM16	***degthr***	See STM1 (starting in Release 2).
STM64	***degthr***	See STM1 (starting in Release 2).
STM1	***dexcthr***	Excessive Degrade Threshold (starting in Release 2. This is more severe than ***degthr***, the degrade threshold. Values: (as exponents of 10) ■ **-3** (initial value $\mathbf{10}^{-3}$) ■ **-4** ■ **-5**.
STM1E	***dexcthr***	See STM1 (starting in Release 2).
STM4	***dexcthr***	See STM1 (starting in Release 2).
STM16	***dexcthr***	See STM1 (starting in Release 2).
STM64	***dexcthr***	See STM1 (starting in Release 2).
STM1	***emi***	EBER ignored for AIS insertion. This parameter controls the contribution of EBER to AIS insertion. If ***emi*** has a value of **TRUE**, then EBER will be ignored in the AIS insertion algorithm. That is, **TRUE** corresponds to **disabling** the consideration of EBER. Values: ■ **TRUE** (initial value) ■ **FALSE**.
STM1E	***emi***	See STM1 (starting in Release 1).
STM4	***emi***	See STM1 (starting in Release 2).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 3 of 11)

rr	Parameter Name	Description
STM16	***emi***	See STM1 (starting in Release 1).
STM64	***emi***	See STM1 (starting in Release 1).
STM1	***exprstrc***	Expected regenerator section trace identifier (starting in Release 3). Value: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. (An example of a byte is 6D.) The length is set with the ***strcxfmt*** parameter.
STM1E	***exprstrc***	See STM1 (starting in Release 3).
STM4	***exprstrc***	See STM1 (starting in Release 3).
STM16	***exprstrc***	See STM1 (starting in Release 3).
STM64	***exprstrc***	See STM1 (starting in Release 3).
STM64	***fec***	FEC Enable (starting in Release 1). Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
STM64	***feccor***	FEC Correction Enable (starting in Release 1). Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
STM64	***fectype***	FEC Type (starting in Release 2). Values: ■ **INBAND** (initial value) ■ **OUTBAND**.
STM1	***femspm***	Far-end Multiplex Section PM Enable (starting in Release 1). Values: ■ **ENABLE** ■ **DISABLE** (initial value).
STM1E	***femspm***	See STM1 (starting in Release 2).
STM4	***femspm***	See STM1 (starting in Release 2).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 4 of 11)

rr	Parameter Name	Description
STM16	***femspm***	See STM1 (starting in Release 1).
STM64	***femspm***	See STM1 (starting in Release 1).
STM1	***frcdus***	Force DUS for sync messaging on optical interfaces (starting in Release 3). When provisioned for **ENABLE**, the message “do not use” will be transmitted from that optical interface. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
STM4	***frcdus***	See STM1 (starting in Release 3).
STM16	***frcdus***	See STM1 (starting in Release 2.1).
STM64	***frcdus***	See STM1 (starting in Release 2.1).
STM1	***inputsig***	Tributary Input Signal Rate List. This parameter is a list of VCn rates across the port's bandwidth. Values: **NX-NX-NX…** where N is the number of Xs. X can be 3, 4, or 4C representing VC3, VC4, or VC4-4C. The initial value of X is 4. Example: an STM-16 signal might be represented by 93-14-14C-243 which implies 9 VC3s, 1 VC4, 1 VC4-4C, 24 VC3s. The representation is not unique; for example, it could also be 33-63-14-14C-243. If ***trbmd*** is **FIXED**, then ***inputsig*** constrains the cross-connection rates that can be entered for the port. If ***trbmd*** is **ADAPTIVE**, then ***inputsig*** has no effect. Starting in Release 2, X may have the value 16C which represents VC-4-16C. An STM-1 port can only have values of 3-3-3 or 4. A VC3 is equivalent to 1/3 of an STM-1. A VC4 is equivalent to one STM-1. A VC4-4C is equivalent to one STM-4. Attempting to assign values that are not consistent with the port’s rate will be DENY’d. If the ***istd*** parameter is changed, then ***inputsig*** will automatically reset to its initial value.
STM1E	***inputsig***	***inputsig*** See STM1 (starting in Release 1).
STM4	***inputsig***	See STM1 (starting in Release 2).
STM16	***inputsig***	See STM1 (starting in Release 1).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 5 of 11)

rr	Parameter Name	Description
STM64	***inputsig***	See STM1 (starting in Release 1).
STM64	***laser***	Provisioned laser state (starting in Release 3). Values: ■ **OFF** ■ **ON** (initial value).
STM1	***msdeg***	Multiplex Section DEG Threshold. Values (as exponents of 10): ■ -**5** ■ -**6** (initial value **10^{-6}**) ■ -**7** ■ -**8** ■ -**9**. The parameter ***msdeg*** is replaced in Release 2 by ***degthr***.
STM1E	***msdeg***	See STM1 (starting in Release 1.0).
STM16	***msdeg***	See STM1 (starting in Release 1.0).
STM64	***msdeg***	See STM1 (starting in Release 1.0).
STM1	***msdexc***	Multiplex Section DEXC Threshold (starting in Release 1.0). Values: (as exponents of 10) ■ -**3** (initial value **10^{-3}**) ■ -**4** ■ -**5**. The parameter ***msdexc*** is replaced in Release 2 by ***dexcthr***.
STM1E	***msdexc***	See STM1 (starting in Release 1.0).
STM16	***msdexc***	See STM1 (starting in Release 1.0).
STM64	***msdexc***	See STM1 (starting in Release 1.0). ■ NONE
STM16	***phypm***	See STM64 (starting in Release 2.1).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 6 of 11)

rr	Parameter Name	Description
STM64	***phypm***	Physical PM Enable (starting in Release 2.1). This enables/disables the physical parameters performance monitoring. Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
STM16	***phytca***	See STM64 (starting in Release 2.1).
STM64	***phytca***	Physical TCA (starting in Release 2.1). This parameter points a PM physical TCA profile name to the designated AID. Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value). Starting in Release 3.0, the **Default0** profile will be changed to **NotReported**.
STM1	***pmmsfeses***	Performance Monitoring Multiplex Section Far-End SES Threshold (starting in Release 1). Values (as a percentage): **0** - **100** at increments of 5 Initial value: **15** The values are a percentage of the maximum number of bit errors. As an example, for STM-1, there can be a maximum number of 24 bit errors per frame. Using this number and the fact there are 8000 frames per second implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E	***pmmsfeses***	See STM1 (starting in Release 2).
STM4	***pmmsfeses***	See STM1 (starting in Release 2).
STM16	***pmmsfeses***	See STM1 (starting in Release 1).
STM64	***pmmsfeses***	See STM1 (starting in Release 1).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 7 of 11)

rr	Parameter Name	Description
STM1	***pmmsne-ses***	Performance Monitoring Multiplex Section Near-End SES Threshold (starting in Release 1). Values (as a percentage): **0** - **100** at increments of 5 Initial value: **15** The values are a percentage of the maximum number of bit errors. As an example, for STM-1, there can be a maximum number of 24 bit errors per frame. Using this number and the fact there are 8000 frames per second implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E	***pmmsne-ses***	See STM1 (starting in Release 2).
STM4	***pmmsne-ses***	See STM1 (starting in Release 2).
STM16	***pmmsne-ses***	See STM1 (starting in Release 1).
STM64	***pmmsne-ses***	See STM1 (starting in Release 1).
STM1	***pmode***	Port Mode. This parameter sets the mode of the port (starting in Release 1). Values: ■ **AUTO** (initial value) Indicates that, when a signal is detected at the port, then alarm monitoring will start. ■ **MON** Indicates that alarm monitoring is taking place on the port. ■ **NMON** Means that alarm monitoring is not occurring on the port.
STM1E	***pmode***	See STM1 (starting in Release 1).
STM4	***pmode***	See STM1 (starting in Release 2).
STM16	***pmode***	See STM1 (starting in Release 1).
STM64	***pmode***	See STM1 (starting in Release 1).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 8 of 11)

rr	Parameter Name	Description
STM1	***pmrsneses***	Performance Monitoring Regenerator Section Near-End SES threshold (starting in Release 1). Values (as a percentage): **0** - **100** at increments of 5 Initial value: **30** The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
STM1E	***pmrsneses***	See STM1 (starting in Release 2).
STM4	***pmrsneses***	See STM1 (starting in Release 2).
STM16	***pmrsneses***	See STM1 (starting in Release 1).
STM64	***pmrsneses***	See STM1 (starting in Release 1).
STM1	***rsmstca***	RS/MS TCA Profile Pointer (starting in Release 2). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value). Starting in Release 3.0, the **Default0** profile will be changed to **NotReported**.
STM1E	***rsmstca***	See STM1 (starting in Release 2).
STM4	***rsmstca***	See STM1 (starting in Release 2.1).
STM16	***rsmstca***	See STM1 (starting in Release 2).
STM64	***rsmstca***	See STM1 (starting in Release 2).
STM1	***rsnemspm***	Regenerator Section/Near-End Multiplex Section PM (starting in Release 1). Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
STM1E	***rsnemspm***	See STM1 (starting in Release 2).
STM4	***rsnemspm***	See STM1 (starting in Release 2).
STM16	***rsnemspm***	See STM1 (starting in Release 1).
STM64	***rsnemspm***	See STM1 (starting in Release 1).

Table 3-50 **ED-STMn** Input *spec_block* Parameters (Sheet 9 of 11)

rr	Parameter Name	Description
STM1	***rstimmon***	Regenerator Section Trace Identifier Mismatch Monitor enable (starting in Release 3). Values: ■ **ENABLE** ■ **DISABLE** (initial value).
STM1E	***rstimmon***	See STM1 (starting in Release 3).
STM4	***rstimmon***	See STM1 (starting in Release 3).
STM16	***rstimmon***	See STM1 (starting in Release 3).
STM64	***rstimmon***	See STM1 (starting in Release 3).
STM1	***sdhpn***	SDH Alarm Severity Assignment Profile (starting in Release 2). This parameter sets an SDH ASAP profile name to which the designated AID points (See **ENT-ASAP-PROF** command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** (initial value).
STM1E	***sdhpn***	See STM1 (starting in Release 2).
STM4	***sdhpn***	See STM1 (starting in Release 2).
STM16	***sdhpn***	See STM1 (starting in Release 2).
STM64	***sdhpn***	See STM1 (starting in Release 2).
STM1	***strcwfmt***	Starting in Release 3, the Write Format of J0, the Outgoing Section Trace (***strcout***). Values: ■ **1** One byte value - a single byte (hexadecimal format). This is the initial value. ■ **16** 16-byte hexadecimal format using T.50 character set, with the first byte being a CRC-7.
STM1E	***strcwfmt***	See STM1 (starting in Release 3).
STM4	***strcwfmt***	See STM1 (starting in Release 3).
STM16	***strcwfmt***	See STM1 (starting in Release 3).
STM64	***strcwfmt***	See STM1 (starting in Release 3).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 10 of 11)

rr	Parameter Name	Description
STM1		***strcout*** Starting in Release 3, the Outgoing Section Trace. This identifies the section trace message to be transmitted. Values: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). The length is set with the ***strcwfmt*** parameter. See ***strcwfmt*** for the initial value of strcout. ■ **00** (Initial value. 0x00 is the ASCII null character.)
STM1E	***strcout***	See STM1 (starting in Release 3).
STM4	***strcout***	See STM1 (starting in Release 3).
STM16	***strcout***	See STM1 (starting in Release 3).
STM64	***strcout***	See STM1 (starting in Release 3).
STM1	***strcxfmt***	Starting in Release 3.0, the format of J0, the expected incoming section trace (***expstrc***). Values: ■ **1** One byte value - a single byte (hexadecimal format). This is the initial value). ■ **2** In support of ETSI “mode 2” - a single byte value 01hex, which is the value of J0 when it was still called C1. (This is the default value) ■ **16** 16-byte hexadecimal format using T.50 character set, with the first byte being a CRC-7.
STM1E	***strcxfmt***	See STM1 (starting in Release 3.0).
STM4	***strcxfmt***	See STM1 (starting in Release 3.0).
STM16	***strcxfmt***	See STM1 (starting in Release 3.0).
STM64	***strcxfmt***	See STM1 (starting in Release 3.0).
STM1	***unequi-posig***	Tributary Unequipped Output Signal Rate List (starting in Release 1). This parameter is a list of VCn rates across the bandwidth of the port. It determines the rate(s) of the “unequipped” signal that will be transmitted if there is no cross connection. Values: See ***inputsig***.
STM1E	***unequi-posig***	See STM1 (starting in Release 1).

Table 3-50 **`ED-STMn`** Input *spec_block* Parameters (Sheet 11 of 11)

rr	Parameter Name	Description
STM4	***unequi-posig***	See STM1 (starting in Release 2).
STM16	***unequi-posig***	See STM1 (starting in Release 1).
STM64	***unequi-posig***	See STM1 (starting in Release 1).

The table that follows describes the input parameters for **`ED-VC3`**. The **`ED-VC3`** command is also applicable to VC4 tributaries. Even though a VC4 signal is not a concatenated VC3 signal in a strict sense, from a pointer processor viewpoint, it can be considered to be comprised of three VC3 signals which have the properties of a concatenated signal. Thus, it is not necessary to have a separate **`ED-VC4`** command. Similarly, **`ED-VC3`** is also applicable to VC4-4C and other "concatenated" tributaries.

The **rr** column identifies the **`ED-rr`** command.

Even if the command is used for a concatenated signal, it can be applied to any of the tributaries (for example, to the second tributary of the concatenated signal). However, only the parameters pertaining to the first tributary of a concatenated signal are used by the software to determine system operation. If the signal were changed from a concatenated signal to non-concatenated, then the parameters for each of the tributaries would be used by the software.

Table 3-51 **`Tributary`** Input Parameters (Sheet 1 of 2)

rr	Parameter Name	Description
	tid	Target Identifier. Refer to **`RTRV-HDR`** command for input parameter syntax and description of this parameter.

Table 3-51 `Tributary` Input Parameters (Sheet 2 of 2)

rr	Parameter Name	Description
VC3	***aid***	Access Identifier (starting in Release 1). Values: ■ tributary AID of a SDH tributary ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
	ctag	Correlation Tag. Refer to **`RTRV-HDR`** command for input parameter syntax and description of this parameter.
	spec_block	The following are the ***spec_block*** parameters.

Table 3-52 `Tributary` Input *spec_block* Parameters (Sheet 1 of 4)

rr	Parameter Name	Description
VC3	***brstintvl***	Bursty Interval (starting in Release 2.1). Measurement period for determining bursty errors. See ***brstthr***. Values: ■ **2 to 10** (seconds) Initial value: **7**
VC3	***brstthr***	Bursty Error Threshold (starting in Release 2.1). Threshold value for bursty errors. Values (as a percentage): **0** - **100** at increments of 5 Initial value: **30**
VC3	***degthr***	Path BER Threshold (starting in Release 2). Values (as exponents of 10): ■ **-5** ■ **-6** (initial value **10^{-6}**) ■ **-7** ■ **-8** ■ **-9**.

Table 3-52 `Tributary` Input *spec_block* Parameters (Sheet 2 of 4)

rr	Parameter Name	Description
VC3	***dexcthr***	Excessive Degrade Threshold (starting in Release 2). This is more severe than ***degthr***, the degrade threshold. Values: (as exponents of 10) ■ -**3** (initial value **10**$^{-3}$) ■ -**4** ■ -**5**.
VC3	***exphptrc***	Expected HP trace (J1) identifier. Values: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). The length is set with the ***hptrcxfmt*** parameter.
VC3	***hptrcxfmt***	Starting in Release 3, the format of J1, the expected incoming high order path trace (***exphptrc***). Values: ■ **1** One byte value - a single byte containing provisioned value (hexadecimal format). ■ **2** In support of ETSI “mode 2" - a single byte with unspecified contents (this is the default value). ■ **16** 16-byte hexadecimal format using T.50 character set, with the first byte using a CRC-7. ■ **64** 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed.
VC3	***hptimmon***	High order path trace (J1) identifier mismatch (TIM) monitor enable (starting in Release 3). Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-52 `Tributary` Input *spec_block* Parameters (Sheet 3 of 4)

rr	Parameter Name	Description
VC3	***msdexc***	Multiplex Section DEXC Threshold (starting in Release 1.0). Values: (as exponents of 10) ■ -**3** (initial value **10**$^{-3}$) ■ -**4** ■ -**5**. The parameter ***msdexc*** is replaced in Release 2 by ***dex-cthr***.
VC3	***pmhpfeses***	Higher-Order Path Far-End SES Threshold (starting in Release 2.1). See ***pmhpneses***.
VC3	***pmhpneses***	Higher-Order Path Near-End SES Threshold (starting in Release 2.1). Values (as a percentage): **0** - **50** at increments of 5 Initial value: **30** The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
VC3	***ppm***	Path PM Enable (starting in Release 2.1). This enables/ disables the path parameters performance monitoring for both the near end and far end. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
VC3	***ptca***	Path TCA Profile Pointer (starting in Release 2.1). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value). Starting in Release 3.0, the **Default0** profile will be changed to **NotReported**.

Table 3-52 **`Tributary`** Input *spec_block* Parameters (Sheet 4 of 4)

rr	Parameter Name	Description
VC3	***tmonmd***	Tributary Monitoring Mode (starting in Release 1). This parameter sets the mode of the tributary. Values: ■ **MON** indicates that alarm monitoring is taking place on the port. ■ **NMON** (initial value) means that alarm monitoring is not occurring on the port.
VC3	***tribsdhpn***	Tributary Alarm Severity Assignment Profile (starting in Release 2). This parameter points a tributary ASAP profile name to the designated AID (See **`ENT-ASAP-PROF`** command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** (initial value).

OUTPUT FORMAT

If the **`ED-rr`** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-rr** command:

```
ED-OC48:LT-WBM:1-1-f01-ew-06-1:123456:::sdthr=-8,sonet=mci,sltca=alert,
pmode=mon;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ED-rr** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- Input signal rate not consistent with the rate supported by the port. For example, an inappropriate ***inputsig***.

- Output signal rate not consistent with the rate supported by the port. For example, an inappropriate ***unequiposig***.
- Tributary mode value, ***trbmd,*** not consistent with the tributary mode supported by the port.
- Changing the Electrical Interface Type parameter, ***eif***, when there is a cross connection, cross-connect loopback, or test access connection on the port.
- Changing the Port Directionality parameter, ***pdir*** or ***opdir***, when there is a cross connection, cross-connect loopback, or test access connection on the port.
- Changing the PTF Standard parameter, ***ptfstd***, when there is a cross connection, cross-connect loopback, or test access connection on the port. Or changing it when there is a protection switch active or being requested on the port.
- Changing the Interface Standard parameter, ***istd***, when there is a cross connection, cross-connect loopback, or test access connection on the port. Or changing it when the port is in a protection group.
- Changing the Tributary Mode parameter, ***trbmd***, to FIXED mode when there is a cross connection, cross-connect loopback, or test access connection on the port.

RELATED TL1 MESSAGES

`RTRV-rr`

`SET-SYNCN`

NAME

ED-STATE-EQPT: Edit State Equipment

The **ED-STATE-EQPT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4 and M4. (A user must be both S4 and M4 to use this command.)

Beginning with Release 2.0, the user privilege code is:
User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

4.

INPUT FORMAT

ED-STATE-EQPT:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ED-STATE-EQPT** command modifies the state information for equipment in the network element.

The **ED-STATE-EQPT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-53 **ED-STATE-EQPT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 1. Value: system AID. See the AID table in OSEG Appendix A.

Table 3-53 **ED-STATE-EQPT** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-54 **ED-STATE-EQPT** Input *spec_block* Parameters

Parameter Name	Description
mcond	Maintenance Condition. This parameter is available starting in Release 1. Modifying this parameter from **Y** to **N** causes a system reset. Value(s): **Y** or **N**.

OUTPUT FORMAT

If the network element fully complies with the **ED-STATE-EQPT** command, then the following output message is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-STATE-EQPT** command:

```
ED-STATE-EQPT:LT-WBM:system:123456:::mcond=y;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ED-STATE-EQPT** command.

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ENT-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ED-TCA-PROF: Edit TCA Profile

The **ED-TCA-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-TCA-PROF:*tid*::*ctag*::*pftype*,*pfname*:*spec_block*;

Only those parameters that the user desires to change are used in the ***spec_block***. The rest of the parameters will keep their current values.

DESCRIPTION

The **ED-TCA-PROF** command allows the user to modify the existing performance monitoring Threshold Crossing Alert (TCA) profile contents or the profile name. The system default profile names (Default and Default0) cannot be changed. For a general description of TCA profiles, refer to the **ENT-TCA-PROF** command.

Starting in Release 3.0, the **Default0** profile will be changed to **NotReported**.

The **ED-TCA-PROF** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-55 **ED-TCA-PROF** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-55 **ED-TCA-PROF** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ **ENET** ■ **HOVC** ■ **PHYSICAL** ■ **RS-MS**
pfname	Profile Name. This indicates the name of the PM TCA profile which was already established by the command **ENT-TCA-PROF** for further modifications of its content. The names of the non-zero and the zero default profiles cannot be modified.
spec_block	See the following table for all ***spec_block*** parameters.

Table 3-56 **ED-TCA-PROF** Input ***spec_block*** Parameters (Sheet 1 of 5)

Parameter Name	Description
newname	This parameter allows a new name to be assigned to the already established profile. Value(s): ❷ **NEW NAME**. If the value is omitted, the current value is not modified. For all the following parameters, a value of **0** will disable thresholding. All the values in parentheses are the initial system default values. The threshold values of the zero default profile cannot be modified. The following parameters belong to **PHYSICAL** profile type.
lbc	Laser Bias Current. Values: ■ **0** ■ **1** (**1**). A value of **1** will enable thresholding to the default value.

Table 3-56 **`ED-TCA-PROF`** Input ***spec_block*** Parameters (Sheet 2 of 5)

Parameter Name	Description
opt	Optical Power Transmitted. Values: ■ **0** ■ **1** (**1**). A value of **1** will enable thresholding to the default value.
opr	Optical Power Received. Values: ■ **0** ■ **1** (**1**). A value of **1** will enable thresholding to the default value.
	The following **RS** parameters belong to SDH **RS-MS** profile type:
qhrsnes	15-minute RS_N_ES bin. Range: **0**-**900** (**180**)
dayrsnes	Day RS_N_ES bin. Range: **0**-**86400** (**1500**)
qhrsnses	15-minute RS_N_SES bin. Range: **0**-**810** (**15**)
dayrsnses	Day RS_N_SES bin. Range: **0**-**77760** (**20**)
qhrsnbbe	15-minute RS_N_BBE bin. Range: **0**-**7199100** (**9000**)
dayrsnbbe	Day RS_N_BBE bin. Range: **0**-**691113600** (**48000**)
qhrsnuas	15-minute RS_N_UAS bin. Range: **0**-**900** (**15**)
dayrsnuas	Day RS_N_UAS bin. Range: **0**-**86400** (**20**)
	The following **MS** parameters belong to SDH **RS-MS** profile type:
qhmses	15-minute MS_N_ES and MS_F_ES bin. Range: **0**-**900** (**50**)
daymses	Day MS_N_ES and MS_F_ES bin. Range: **0**-**86400** (**150**)
qhmsses	15-minute MS_N_SES and MS_F_SES bin. Range: **0**-**810** (**10**)

Table 3-56 **ED-TCA-PROF** Input ***spec_block*** Parameters (Sheet 3 of 5)

Parameter Name	Description
daymsses	Day MS_N_SES and MS_F_SES bin. Range: **0**-**77760** (**15**)
qhmsbbestm1	15-min MS_N_BBE and MS_F_BBE stm1 bin. Range: **0**-**16777215** *(**228000**)
daymsbbestm1	Day MS_N_BBE and MS_F_BBE stm1 bin. Range: **0**-**2147483647** ** (**432000**)
qhmsbbestm4	15-min MS_N_BBE and MS_F_BBE stm4 bin. Range: **0**-**16777215** *(**912000**)
daymsbbestm4	Day MS_N_BBE and MS_F_BBE stm4 bin. Range: **0**-**2147483647** **(**1728000**)
qhmsbbestm16	15-min MS_N_BBE/MS_F_BBE stm16 bin. Range: **0**-**16777215** *(**3648000**)
daymsbbestm16	Day MS_N_BBE and MS_F_BBE stm16 bin. Range: **0**-**2147483647** **(**6912000**)
qhmsbbestm64	15-min MS_N_BBE/MS_F_BBE stm64 bin. Range: **0**-**16777215** *(**14592000**)
daymsbbestm64	Day MS_N_BBE and MS_F_BBE stm64 bin. Range: **0**-**2147483647** **(**27648000**)
qhmsuas	15-min MS_N_UAS/MS_F_UAS stm64 bin. Range: **0**-**900** (**15**)
daymsuas	Day MS_N_UAS and MS_F_UAS stm64 bin. Range: **0**-**86400** (**20**)
qhmsnfecc	15-min MS_N_FECC stm64 bin. Range: **0**-**5184000**(**5184**)
daymsnfecc	Day MS_N_FECC stm64 bin. Range: **0**-**497664000** (**497664**)
qhmsnfecu	15-min MS_N_FECU stm64 bin. Range: **0**-**2592000** (**2592**)
daymsnfecu	Day MS_N_FECU stm64 bin. Range: **0**-**248832000** (**248832**)
	The following parameters belong to SDH **HOVC** profile type:
qhvcesvc3	15-minute VC_N_ES and VC_F_ES VC3 bin. Range: **0**-**900** (**150**)
dayvcesvc3	Day VC_N_ES and VC_F_ES VC3 bin. Range: **0**-**86400** (**600**)

Table 3-56 **ED-TCA-PROF** Input ***spec_block*** Parameters (Sheet 4 of 5)

Parameter Name	Description
qhvcesvc4	15-minute VC_N_ES and VC_F_ES VC4 bin. Range: **0**-**900** (**180**)
dayvcesvc4	Day VC_N_ES and VC_F_ES VC4 bin. Range: **0**-**86400** (**1500**)
qhvcesvc44c	15-minute VC_N_ES/VC_F_ES VC4-4C bin. Range: **0**-**900** (**180**)
dayvcesvc44c	Day VC_N_ES/VC_F_ES VC4-4C bin. Range: **0**-**86400** (**1500**)
qhvcesvc416c	15-minute VC_N_ES/VC_F_ES VC4-16C bin. Range: **0**-**900** (**180**)
dayvcesvc416c	Day VC_N_ES/VC_F_ES VC4-16C bin. Range: **0**-**86400** (**1500**)
qhvcsesvc3	15-minute VC_N_SES/VC_F_SES VC3 bin. Range: **0**-**810** (**15**)
dayvcsesvc3Day	VC_N_SES/VC_F_SES VC3 bin. Range: **0**-**77760** (**20**)
qhvcsesvc4	15-minute VC_N_SES/VC_F_SES VC4 bin. Range: **0**-**810** (**15**)
dayvcsesvc4	Day VC_N_SES/VC_F_SES VC4 bin. Range: **0**-**77760** (**20**)
qhvcsesvc44c	15-minute VC_N_SES/VC_F_SES VC44C bin. Range: **0**-**810** (**15**)
dayvcsesvc44c	Day VC_N_SES/VC_F_SES VC44C bin. Range: **0**-**77760** (**20**)
qhvcsesvc416c	15-minute VC_N_SES/VC_F_SES VC416C bin. Range: **0**-**810** (**15**)
dayvcsesvc416c	Day VC_N_SES/VC_F_SES VC416C bin. Range: **0**-**77760** (**20**)
qhvcbbevc3	15-minute VC_N_BBE/VC_F_BBE VC3 bin. Range: **0**-**65535** &(**36000**)
dayvcbbevc3	Day VC_N_BBE/VC_F_BBE VC3 bin. Range: **0**-**8388607** &&(**48000**)
qhvcbbevc4	15-minute VC_N_BBE/VC_F_BBE VC4 bin. Range: **0**-**65535** &(**36000**)

Table 3-56 **ED-TCA-PROF** Input ***spec_block*** Parameters (Sheet 5 of 5)

Parameter Name	Description
dayvcbbevc4	Day VC_N_BBE/VC_F_BBE VC4 bin. Range: **0-8388608** &&(**48000**)
qhvcbbevc44c	15-minute VC_N_BBE/VC_F_BBE VC44C bin. Range: **0-16777215 ***(**36000**)
dayvcbbevc44c	Day VC_N_BBE/VC_F_BBE VC44C bin. Range: **0-2147483647 ****(**48000**)
qhvcbbevc416c	15-minute VC_N_BBE/VC_F_BBE VC416C bin. Range: **0-16777215 ***(**36000**)
dayvcbbevc416c	Day VC_N_BBE/VC_F_BBE VC416C bin. Range: **0-2147483647 ****(**48000**)
qhvcuasvc3	15-minute VC_N_UAS/VC_F_UAS VC3 bin. Range: **0-900** (**15**)
dayvcuasvc3	Day VC_N_UAS/VC_F_UAS VC3 bin. Range: **0-86400** (**20**)
qhvcuasvc4	15-minute VC_N_UAS/VC_F_UAS VC4 bin. Range: **0-900** (**15**)
dayvcuasvc4	Day VC_N_UAS/VC_F_UAS VC4 bin. Range: **0-86400** (**20**)
qhvcuasvc44c	15-minute VC_N_UAS/VC_F_UAS VC44C bin. Range: **0-900** (**15**)
dayvcuasvc44c	Day VC_N_UAS/VC_F_UAS VC44C bin. Range: **0-86400** (**20**)
qhvcuasvc416c	15-minute VC_N_UAS/VC_F_UAS VC416C bin. Range: **0-900** (**15**)
dayvcuasvc416c	Day VC_N_UAS/VC_F_UAS VC416C bin. Range: **0-86400** (**20**)
	The following parameters belong to the **ENET** profile type:
qhedfe	15-minute EDFE bin. Range: **0-4294967295** frames (1875000 frames)
dayedfe	Day EDFE bin. Range: **0-4294967295** frames (9000000 frames)

OUTPUT FORMAT

If the **ED-TCA-PROF** command completes successfully, this is the normal response:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there apply to the **ED-TCA-PROF** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of an **ED-TCA-PROF** command by the network element:

```
ED-TCA-PROF:LT-WBM::123456::ds3,sprint:qhcvp=523,qhsasp=6;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the ED-TCA-PROF command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response:

- The profile name specified is not valid or too long.
- The threshold value is out of range.

The **INPUT, Data Not Consistent** error response is shown below:

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

The following condition will cause an IDNC error response:

- The user intends to change the system default profile name. That is, the “profile name” is “Default” or “NotReported” and the “new profile name” is not null.

The **Input, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The profile type specified is not valid.

The **Status, Data Not Consistent, invalid instance of entity** error response is shown below:

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

The following condition will cause an SDNC error response:

- The profile name specified does not exist.

The **Input, Entity Already Exists** error response is shown below:

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

The following condition will cause an IEAE error response:

- The new profile name is the same as the existing profile name for the same profile type.

The **Status, Working unit FAiled, control hardware failed or missing** error response is shown below:

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

The following condition will cause an SWFA error response (for a specific product release, some of these conditions might not be applicable):

- Failure to update information on NVM.

RELATED TL1 MESSAGES

DLT-TCA-PROF

ED-rr

ENT-TCA-PROF

RTRV-TCA-ASGNMT

RTRV-TCA-PROF

NAME

ED-USER-SECU: Edit User Security

The **ED-USER-SECU** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

1.

INPUT FORMAT

ED-USER-SECU:*tid*:*uid*:*ctag*::,[*new_pid*],,[*upc*][:*spec_block*];

DESCRIPTION

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

The network element shall always have two preinstalled users with full privileges in all functional categories. These two users will be referred to as Administrators (or Superusers). The network element will not allow adding additional administrator type users. It will not be possible to remove either of the original administrator login IDs. An administrator's ***upc*** cannot be modified using the **ED-USER-SECU** command.

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

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

The **ED-USER-SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-57 **`ED-USER-SECU`** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
uid	Specifies the User ID. Only users with a UCFC/UCAL of **S5** can change parameters of another user. This parameter must be entered by an administrator when changing parameters of another user; otherwise, the **`ED-USER-SECU`** command is denied. Refer to the **`ACT-USER`** command.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
new_pid	Specifies the New Password ID. The administrator need not have to enter this parameter to be able to change parameter values associated with that user. This is an optional parameter and in the absence of a value default is the current value. Refer to the **`ACT-USER`** command.
upc	User Privilege Code List. This defines which TL1 commands a user is allowed to execute. All TL1 commands are categorized into a functional category: **S** (System administration), **T** (Test access), **M** (Maintenance), **P** (Provisioning), **PM** (Performance monitoring), and **D** (Debug). Within each functional category, there is an authorization level that restricts a user's access to certain commands within the category; a user's level allows access to commands of that level and lower. An **S3** user, for example, can execute all commands with privilege S1, S2, and S3. The ***upc*** parameter is a list of these category/level pairs. If the upc parameter is omitted, the current value is not changed. If some, but not all, of the functional categories are specified, the unspecified categories are set to their initial authorization levels. In other words, to change the authorization levels for some functional categories but not others, the authorization levels for all categories have to be specified, including the unchanged ones. Value: An ampersand (&) separated list from the following set: **P**i, **M**i, **T**i, **S**i, **PM**i, **D**i where "i" is an integer which is the authorization level in that category. The value of i is **0** (low) to **5** (high), except for the **S** category, which only supports levels **1** to **5**. If an authorization level is set to **0**, the user will have no privileges for that functional category. In other words, an authorization level of **0** disables that functional category for that user. The initial authorization level is **1** for all functional categories, except for the **D** category, which has an initial level of **0**.

Table 3-57 **`ED-USER-SECU`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	Note: '**D**i' is a Lucent-only category which can only be used with a special password to create a debug session. ***uid***s with **D**i as the ***upc*** will be unable to set up a successful TL1 session.
spec_block	See the following table for the *spec_block* parameters.

Table 3-58 **`ED-USER-SECU`** Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
alw_login	Allow Login. This parameter is available starting in Release 2.1. This parameter allows an administrator to enable or disable a User ID. When a User ID is manually disabled, any active sessions for that login shall be terminated. Values: ■ **YES** User ID is enabled. ■ **NO** User ID is disabled.
initobs	Initialization Observability. This parameter is available starting in Release 2.1. This parameter allows the system to accept commands before it has completed initialization. Do not enable this parameter in networks using a Telcordia operations system. Values: ■ **ENABLE** ■ **DISABLE**. The initial value is **DISABLE**.
newuid	New ***uid***. This parameter is available starting in Release 3. This parameter allows an existing administrator login to be renamed. It cannot be used to rename a non-administrator login. Values: Refer to the ***uid*** parameter in the **`ACT-USER`** command.
page	Password Aging Interval. This parameter is available starting in Release 2. This parameter specifies the period in days after which the user has to change the password of their account. A value of **0** disables the password aging interval function. The initial value is **90** days. If the parameter is not specified, it retains its current value. Values: ■ **0**, **7-999 days**

Table 3-58 **`ED-USER-SECU`** Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
screen	Message screening specifies the type of notifications and/or responses that are received by the ***uid***. Any combination of these values, except **NA**, may be specified using ampersand (&). If a value is not specified, the parameter retains its current value. Values: ■ **DBCHG** — Establish/Modify/Remove Notifications - report changes in creation of entities/report, changes in user provisionable parameters/ report, changes in deletion of entities. Reports database changes. User will receive **`REPT DBCHG`** messages. ■ **STCHG** — State Notifications - report changes in user non-provisionable parameters (state changes). User will receive **`REPT DBCHG`** messages. ■ **PSCHG** — Protection Switch Notifications - report protection switch changes. User will receive **`REPT EVT`** and **`REPT SW`** messages. ■ **ALARMS** — Alarm Notifications. User will receive **`REPT ALM ENV`**, **`REPT ALM`**, and **`REPT EVT`** messages. ■ **NA** — DBCHG Notifications for OPS/INE Users per TL1 Memory Administration. ■ **ALL** — All Notifications Listed Above. If **ALL** is specified, it is needless to specify other values. If **ALL** is one of the values specified, the NE will disregard the other values. ■ **OWN** — Responses to the user's own commands. User will receive no other notifications. If **OWN** is specified, no other values should be specified. If **OWN** is specified together with other values, the value **OWN** will be disregarded.
tmout	Inactivity Timeout Period. This parameter is available starting in Release 2. If there are no messages between the user and the NE over the Timeout Period, the session is logged off. A value of **0** disables the timeout function.The initial value is **30** minutes. If the parameter is not specified, it retains its current value. Values: ■ **0-999 minutes**

Table 3-58 **`ED-USER-SECU`** Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
ucpl	Specifies User Community Priority Level. Input commands from users with higher priority are executed before commands from users with lower priority. If the parameter is not specified, it retains its current value. Values: ■ **1**-**5**.
uidclass	UID Class. This parameter is available starting in Release 2. This is the user class of a ***uid***. Values: ■ **MEMADMIN** The user is a memory administration operations system. If ***uidclass*** is set to **MEMADMIN**, the value of ***screen*** can only be set to **NA**. ■ **OTHER** This is the initial value.

OUTPUT FORMAT

If the **`ED-USER-SECU`** request is successful, the network element returns the following normal completion response:

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

Starting with Release 1.0, if the ***uid*** is currently logged in when the **`ED-USER-SECU`** command is successfully executed, the user session identified by the uid is not terminated and is unaffected. It will continue to use the previous values. The changes will take effect the next time the user logs in.

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **ED-USER-SECU** command by the network element:

```
ED-USER-SECU:LT-WBM-789:kjlee:123456::,pass13+,,P3&M3&PM2:
SCREEN=DBCHG;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **ED-USER-SECU** command.

RELATED TL1 MESSAGES

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

NAME

ED-USER: Edit User

The **ED-USER** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

ED-USER:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

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

The **ED-USER** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-59 **ED-USER** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-60 **`ED-USER`** Input *spec_block* Parameters

Parameter Name	Description
screen	Message screening specifies the type of notifications and/or responses that are received by the ***uid***. Any combination of these values, except **NA**, may be specified using ampersand (&). If a value is not specified, the parameter retains its current value. Users may give themselves more privileges than what the administrator gave them. Users can sign up to receive more message types than what the administrator set up for them. Values: ■ **DBCHG** — Establish/Modify/Remove Notifications - report changes in creation of entities/report, changes in user provisionable parameters/ report, changes in deletion of entities. Reports database changes. User will receive **`REPT DBCHG`** messages. ■ **STCHG** — State Notifications - report changes in user non-provisionable parameters (state changes). User will receive **`REPT DBCHG`** messages. ■ **PSCHG** — Protection Switch Notifications - report protection switch changes. User will receive **`REPT EVT`** and **`REPT SW`** messages. ■ **ALARMS** — Alarm Notifications. User will receive **`REPT ALM ENV`**, **`REPT ALM`**, and **`REPT EVT`** messages. ■ **ALL** — All Notifications Listed Above. If **ALL** is specified, it is needless to specify other values. If **ALL** is one of the values specified, the NE will disregard the other values. ■ **OWN** — Responses to the user’s own commands. User will receive no other notifications. If **OWN** is specified, no other values should be specified. If **OWN** is specified together with other values, the value **OWN** will be disregarded.

OUTPUT FORMAT

If the **ED-USER** command request is successful, the network element returns the following normal completion response:

```
   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 the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **ED-USER** command by the network element:

```
ED-USER:LT-WBM::123456:::SCREEN=DBCHG;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **ED-USER** command.

RELATED TL1 MESSAGES

RTRV-USER

NAME

ED-VCG: Edit Virtual Concatenation Group

The **ED-VCG** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-VCG:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ED-VCG** command modifies the properties of a virtual concatenation group.

General Description of VCG and ethernet TL1 commands

Parameters that describe either ethernet or VCG signals, are modified via the **ED-EPORT** and **ED-VCG** commands respectively. For both commands, the alarm levels for the incoming customer signals are described by an Ethernet Alarm Severity Assignment Profile (type ENET).

The ethernet port signals and the VCG signals and are processed into VCG tributaries which can be cross connected like other tributaries. The alarm levels for the VCG tributaries are described by a Path Terminating Alarm Severity Assignment Profile (type PT or PTSDH). Properties of VCG tributaries can be modified by the **ED-VCGTRIB** command.

RTRV-EPORT, **RTRV-VCG**, and **RTRV-VCGTRIB** can be used to retrieve parameter values. **RTRV-VLAN** retrieves the attributes of one or more VLANs (virtual LAN) which are embedded in the VCG or ethernet signals.

The **ED-VCG** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-61 **ED-VCG** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 3. Value: VCG AID. See the AID table in OSEG Appendix A. An “all” AID range is allowed up to the shelf level.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-62 **ED-VCG** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
enetpn	Ethernet Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
vmode	VCG Monitoring Mode. This parameter is available starting in Release 3. Values: ■ **MON** ■ **NMON** (initial value).
vpm	VCG PM Enable. This parameter is available starting in Release 3. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-62 **ED-VCG** Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
lcasmd	LCAS/VBA Mode Enable. This parameter is available starting in Release 4. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **ED-VCG** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **ED-VCG** command by the network element:

```
ED-VCG:LT-WBM:1-1-#-#-01-v1:123456:::vmode=NMON;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **ED-VCG** command.

RELATED TL1 MESSAGES

ED-EPORT

ED-VCGTRIB

RTRV-EPORT

RTRV-VCG

RTRV-VCGTRIB

RTRV-VLAN

NAME

ED-VCGTRIB: Edit Virtual Concatenation Group Tributary

The **ED-VCGTRIB** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-VCGTRIB-*modifier*:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ED-VCGTRIB** command modifies the properties of a virtual concatenation group tributary.

General Description of VCG and ethernet TL1 commands

Parameters that describe either ethernet or VCG signals, are modified via the **ED-EPORT** and **ED-VCG** commands respectively. For both commands, the alarm levels for the incoming customer signals are described by an Ethernet Alarm Severity Assignment Profile (type ENET).

The ethernet port signals and the VCG signals and are processed into VCG tributaries which can be cross connected like other tributaries. The alarm levels for the VCG tributaries are described by a Path Terminating Alarm Severity Assignment Profile (type PT or PTSDH). Properties of VCG tributaries can be modified by the **ED-VCGTRIB** command.

RTRV-EPORT, **RTRV-VCG**, and **RTRV-VCGTRIB** can be used to retrieve parameter values. **RTRV-VLAN** retrieves the attributes of one or more VLANs (virtual LAN) which are embedded in the VCG or ethernet signals.

The **ED-VCGTRIB** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-63 **`ED-VCGTRIB`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the `RTRV-HDR` command for the input parameter syntax and description of this parameter.
	An “all” AID range is allowed up to the shelf level.
ctag	Correlation Tag. Refer to the `RTRV-HDR` command for the input parameter syntax and description of this parameter.
modifier	Modifier. Values: ■ **STS** ■ **VC**
spec_block	The following table lists the ***spec_block*** parameters.

Table 3-64 **`ED-VCGTRIB-rr`** ***spec_block*** Parameters (Sheet 1 of 7)

rr	Parameter Name	Description
STS	***brstintvl***	Bursty Interval (starting in Release 3). Measurement period for determining bursty errors. See ***brstthr***. Values: ■ **2 to 10** (seconds) Initial value: **7**
VC	***brstintvl***	Bursty Interval (starting in Release 3). Measurement period for determining bursty errors. See ***brstthr***. Values: ■ **2 to 10** (seconds) Initial value: **7**
STS	***brstthr***	Bursty error Threshold (starting in Release 3). Threshold value for bursty errors. Values (as a percentage): **0** - **100** at increments of 5 Initial value: **30**

Table 3-64 **`ED-VCGTRIB-rr`** ***spec_block*** Parameters (Sheet 2 of 7)

rr	Parameter Name	Description
VC	***brstthr***	Bursty error Threshold (starting in Release 3). Threshold value for bursty errors. Values (as a percentage): **0** - **100** at increments of 5 Initial value: **30**
STS	***degthr***	Path BER Threshold. This parameter is available starting in Release 3. Values (as exponents of 10): ■ **-5** ■ **-6** (initial value **10**$^{-6}$) ■ **-7** ■ **-8** ■ **-9**.
VC	***degthr***	Path BER Threshold. This parameter is available starting in Release 3. Values (as exponents of 10): ■ **-5** ■ **-6** (initial value **10**$^{-6}$) ■ **-7** ■ **-8** ■ **-9**.
STS	***dexcthr***	Excessive Degrade Threshold. This parameter is available starting in Release 3. This is more severe than ***degthr***, the degrade threshold. Values: (as exponents of 10) ■ **-3** (initial value **10**$^{-3}$) ■ **-4** ■ **-5**.
VC	***dexcthr***	Excessive Degrade Threshold. This parameter is available starting in Release 3. This is more severe than ***degthr***, the degrade threshold. Values: (as exponents of 10) ■ **-3** (initial value **10**$^{-3}$) ■ **-4** ■ **-5**.

Table 3-64 `ED-VCGTRIB-rr` ***spec_block*** Parameters (Sheet 3 of 7)

rr	Parameter Name	Description
VC	***exphptrc***	Expected HP trace (J1) identifier. This parameter is available starting in Release 3. Value(s): ■ Hexadecimal digits (Each byte is expressed as two hexadecimal digits. An example of a byte is 6D).
VC	***hptimmon***	High-order path trace (J1) identifier mismatch (TIM) monitor enable. This parameter is available starting in Release 3. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
VC	***pmhpfeses***	Higher-order Path Far-end SES Threshold. This parameter is available starting in Release 3. See ***pmhpneses***.
VC	***pmhpneses***	Higher-order Path Near-end SES Threshold. This parameter is available starting in Release 3. Values (as a percentage): **0** - **50** at increments of 5. Initial value: **30** The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
STS	***ppm***	Path PM Enable. This parameter is available starting in Release 3.This enables/disables the STS-1 path parameters performance monitoring for both the near end and far end. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
VC	***ppm***	Path PM Enable. This parameter is available starting in Release 3.This enables/disables the STS-1 path parameters performance monitoring for both the near end and far end. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-64 **`ED-VCGTRIB-rr`** ***spec_block*** Parameters (Sheet 4 of 7)

rr	Parameter Name	Description
STS	***ptca***	Path TCA. This parameter is available starting in Release 3. This parameter points a PM path TCA profile name to the designated AID. (See `ENT-TCA-PROF` command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **NotReported** (initial value).
VC	***ptca***	Path TCA. This parameter is available starting in Release 3. This parameter points a PM path TCA profile name to the designated AID. (See `ENT-TCA-PROF` command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **NotReported** (initial value).
STS	***ptffmcrs***	PTF FM Crossconnect Dependency. This parameter is available starting in Release 3. Values: ■ **YES** (initial value). ■ **NO**
VC	***ptffmcrs***	PTF FM Crossconnect Dependency. This parameter is available starting in Release 3. Values: ■ **YES** ■ **NO** (initial value).
STS	***ptpn***	Path Terminating Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
VC	***ptpn***	Path Terminating Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.

Table 3-64 **`ED-VCGTRIB-rr`** ***spec_block*** Parameters (Sheet 5 of 7)

rr	Parameter Name	Description
STS	***ptrcrfmt***	Starting in Release 3, the read format of J1, the incoming path trace (***ptrc***). Values: ■ **1** One byte value A single byte (hexadecimal format using the printable T.50/ASCII character set). ■ **16** 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. ■ **64** 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed. This is the initial value.
VC	***ptrcrfmt***	Starting in Release 3, the read format of J1, the incoming path trace (***ptrc***). Values: ■ **1** One byte value A single byte (hexadecimal format using the printable T.50/ASCII character set). This is the initial value. ■ **16** 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. ■ **64** 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed.

Table 3-64 **`ED-VCGTRIB-rr`** ***spec_block*** Parameters (Sheet 6 of 7)

rr	Parameter Name	Description
STS	***ptrcwfmt***	Starting in Release 3, write format of J1, the outgoing path trace (***trc***). Values: ■ **1** One byte value The single byte (hexadecimal format using the printable T.50/ASCII character set) is repeated over and over, with no terminating/ initial sequence. The initial value is 0x00, the ASCII null character. Of the 3 formats, this is the initial setting. ■ **16** 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. The initial value is a header byte followed by 15 0x00's (the ASCII null character). ■ **64** 64-byte hexadecimal format using the printable T.50/ASCII character set. The initial value is 62 0x00's (the ASCII null character) followed by a carriage return, line feed.
VC	***ptrcwfmt***	Starting in Release 3, write format of J1, the outgoing path trace (***trc***). Values: ■ **1** One byte value The single byte (hexadecimal format using the printable T.50/ASCII character set) is repeated over and over, with no terminating/ initial sequence. The initial value is 0x00, the ASCII null character. Of the 3 formats, this is the initial setting. ■ **16** 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. The initial value is a header byte followed by 15 0x00's (the ASCII null character). ■ **64** 64-byte hexadecimal format using the printable T.50/ASCII character set. The initial value is 62 0x00's (the ASCII null character) followed by a carriage return, line feed.

Table 3-64 **`ED-VCGTRIB-rr`** ***spec_block*** Parameters (Sheet 7 of 7)

rr	Parameter Name	Description
STS	***tmonmd***	Tributary Monitoring Mode. This parameter is available starting in Release 3. This parameter sets the mode of the tributary. Values: ■ **MON** Indicates that alarm monitoring is taking place on the tributary. ■ **NMON** (Initial value) means that alarm monitoring is not occurring on the tributary.
VC	***tmonmd***	Tributary Monitoring Mode. This parameter is available starting in Release 3. This parameter sets the mode of the tributary. Values: ■ **MON** Indicates that alarm monitoring is taking place on the tributary. ■ **NMON** (Initial value) means that alarm monitoring is not occurring on the tributary.
STS	***trc***	Outgoing Path Trace. This parameter is available starting in Release 3. This identifies the path trace (J1) message to be transmitted. Values: ■ Hexadecimal digits (Each byte is expressed as two hexadecimal digits. An example of a byte is 6D). The length is set with the ***ptrcwfmt*** parameter. ■ **00** (Initial value. 0x00 is the ASCII null character).
VC	***trc***	Outgoing Path Trace. This parameter is available starting in Release 3. This identifies the path trace (J1) message to be transmitted. Values: ■ Hexadecimal digits (Each byte is expressed as two hexadecimal digits. An example of a byte is 6D). The length is set with the ***ptrcwfmt*** parameter. ■ **00** (Initial value. 0x00 is the ASCII null character).

OUTPUT FORMAT

If the network element fully complies with the **ED-VCGTRIB** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **ED-VCGTRIB** command.

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-VCGTRIB** command:

```
ED-VCGTRIB-STS:LT-WBM:1-1-#-#-01-v1-1:123456:::tmonmd=NMON;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **ED-VCGTRIB** command.

RELATED TL1 MESSAGES

ED-EPORT

ED-VCG

RTRV-EPORT

RTRV-VCG

RTRV-VCGTRIB

RTRV-VLAN

NAME

ENT-ASAP-PROF: Enter Alarm Severity Assignment Profile

The **ENT-ASAP-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-ASAP-PROF:*tid*::*ctag*::*pftype*,*pfname*;

DESCRIPTION

The **ENT-ASAP-PROF** command is used to define the name of an Alarm Severity Assignment Profile (ASAP). For a general description of alarms, see **RTRV-ALM.**

General Description of Alarm Severity Assignment Profiles

Alarm Severity Assignment Profiles are used to assign alarm levels to entities (for example, assign the alarm level to an LOS at a specific port).

The alarm levels that can be assigned are:

- **CR** Critical
- **MJ** Major
- **MN** Minor
- **NA** Not Alarmed
- **NR** Not Reported.

There are different types of ASAP profiles. An examples of a profile type (***pftype***) is and **BLSR**. Each profile type has a set of parameters, and each parameter has a default value, such as **CR**. The default values for all profile types are given in the **ED-ASAP-PROF** TL1 document.

Other profiles can be created in addition to the “Default” profiles by using the **ENT-ASAP-PROF** command.

The **ED-ASAP-PROF** command can be used to change a profile’s name or its parameter values.

RTRV-ASAP-PROF can be used to display what profiles have been created and, if desired, what are the parameter values.

Since the number of profiles that can exist is limited, the **DLT-ASAP-PROF** command is available for deleting a profile.

After a profile has been created, it can be assigned to a specific entity by using one of the commands indicated in the following table. The applicable ***pftype*** values are given in the “**ENT-ASAP-PROF** Input Parameters” table.

Table 3-65 Assignment of ASAP Profiles

pftype	**Description**
APS	**ED-PROTN-GRP** (1+1 Optical)
APS	**ED-PROTN-GRP** (1xN Optical)
BLSR	**ED-PROTN-GRP** (2F)
DRIPATH	**ED-PROTN-GRP**
ENET	**ED-EPORT**
ENET	**ED-VCG**
ENET	**ED-VCGTRIB**
ENV	**SET-ATTR-ENV**
EQPT	**ED-EQPT**
PT	**ED-VCGTRIB**
PTSDH	**ED-VCGTRIB**
SDH	**ED-STMn**
TIMING	**SET-SYNCN**
TRIBSDH	**ED-VC3**

The Input Parameters Table of **ED-ASAP-PROF** gives details about each profile type. It lists the parameters for each profile, a description of the parameters, and the default values.

The **ENT-ASAP-PROF** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-66 **ENT-ASAP-PROF** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
pftype	Profile Type. This parameter indicates the type of ASAP profile and may have one of the following values: ■ **APS** Automatic Protection Switch ■ **BLSR** Bilateral Switched Ring Protection Switch (for an SDH product, this also applies to MS-SPRing). ■ **DRIPATH** DRI/Path Protection Switch (starting in Release 3.0) ■ **ENET** Ethernet This value is available starting with Release 3 ■ **ENV** Environmental (Miscellaneous Discrete) This value is available starting with Release 3. ■ **EQPT** Equipment ■ **PT** Path terminating, SONET ■ **PTSDH** Path terminating, SDH ■ **SDH** STM-N Port ■ **TIMING** System Timing ■ **TRIBSDH** AU-N point-point tributary (nonprotected tributary).
pfname	Profile Name. This parameter indicates the name of the ASAP profile. This is an alphanumeric character string with a maximum of 24 characters. The first character must be a letter.

The same name may be specified for different types of profiles.

For example, a **DS3IN** ASAP profile and a **SONET** ASAP profile may both be named att.

Each type of profile has a profile named “Default” that is made up of all the default values for that type.

The default values can be modified.

See **ED-ASAP-PROF** for a list of the parameter values of the default profiles.

Establishment of new ASAPs is subject to the following maximum number restriction, not including the default image:

Table 3-67 Maximum Profiles for each Profile Type

pftype	**Maximum # of profiles**
APS	3
BLSR	3
DRIPATH	3
ENET	6
ENV	5
EQPT	6
PT	6
PTSDH	6
SDH	10
TIMING	2
TRIBSDH	6

OUTPUT FORMAT

If the network element fully complies with the **ENT-ASAP-PROF** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example creates an **SDH** ASAP profile that is named mysdh:

```
ENT-ASAP-PROF:LT-WBM::123456::sdh,mysdh;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **ENT-ASAP-PROF** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **INPUT, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response (for a specific product release, some of these conditions might not be applicable):

- The ***pfname*** parameter specified is not valid or too long.

The **INPUT, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- An invalid ***pftype*** parameter is specified.

The **INPUT, Entity Already Exists** error response is shown below:

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

The following condition will cause an IEAE error response (for a specific product release, some of these conditions might not be applicable):

- The new profile name already exists for the specified profile type.

The **Status, System Resources Exceeded** error response is shown below:

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

The following condition will cause an SSRE error response (for a specific product release, some of these conditions might not be applicable):

- The maximum number of profiles is exceeded.

RELATED TL1 MESSAGES

DLT-ASAP-PROF

ED-ASAP-PROF

RTRV-ASAP-PROF

NAME

ENT-CRS: Enter Cross Connection

The **ENT-CRS** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

3.

INPUT FORMAT

ENT-CRS-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::[*cct*][,*in_aid2*]:[*spec_block*]:
[*state_block*];

Starting with Release 2.1, the syntax is:

ENT-CRS-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::[*cct*],[*in_aid2*],
[*appg_aid*]:[*spec_block*]:[*state_block*];

DESCRIPTION

The **ENT-CRS** command can be initiated by a user to establish cross connection between valid logical tributaries in the network element.

The ***modifier*** in the **ENT-CRS** command indicates the cross-connection rate of the tributary on which the **ENT-CRS** command is going to act. The number of cross connections from the same logical input tributary is restricted to two. The network element accepts **ENT-CRS** commands requesting cross connections to the protection tributaries of a BLSR.

The **ED-CRS** command can be used to modify cross connections, **DLT-CRS** can be used to delete cross connection, and **RTRV-CRS** can be used to indicate existing cross connections. The **ENT-ROLL** command can be initiated by a user to roll the input of an existing leg of a cross connection from a given tributary to another tributary, while leaving the output unchanged.

If a tributary is in test access mode, then the cross-connection commands **ENT/ED-CRS** cannot be used on that tributary. A test access connection is established by the **CONN-TACC** command and disconnected by the **DISC-TACC** command. See **CONN-TACC** for more details.

If a loopback exists on a tributary, then the cross-connection commands **ENT/ED-CRS** cannot be used on that tributary. A loopback is established via the **OPR-LPBK** and deleted by the **RLS-LPBK** command. See **OPR-LPBK** for more details.

The **ENT-CRS** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-68 **ENT-CRS** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the establish cross-connect command acts. Values: ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1) ■ **VC416C** (starting in Release 2).
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
in_aid	Input Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A). Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
out_aid	Output Access Identifier. Value: logical tributary AID. Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-68 **ENT-CRS** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
cct	Cross-Connect Topology. Values: ■ **1WAY** ■ **2WAY**(default) ■ **1WAYPPROT** (starting with Release 1) ■ **ADJCTPPROT** (starting with Release 2.1).
in_aid2	2nd Input Access Identifier. This parameter is applicable to path-protected and adjunct path-protected cross connections. The tributary specified via ***in_aid*** is the working leg and the tributary specified by ***in_aid2*** is the protection leg. Value: logical tributary AID.
appg_aid	Adjunct Path Protection Group Access Identifier. It identifies an associated path protection group when establishing adjunct cross connection. See the AID table in OSEG Appendix A. Value: logical AID.
spec_block ***state_block***	The following table contains ***spec_block*** and parameters. The next table contains ***state_block*** and parameters.

Table 3-69 **ENT-CRS** Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
loca	Identifies the ***tid*** associated with in_aid of the node at which service is **added** to the BLSR. This parameter Is required for BLSR THROUGH, INTER-BLSR and DROP connections. A 2-way cross connection is considered to be a DROP if *out_aid* is a non-BLSR trib. This parameter is not applicable to ADD and non-BLSR connections Values: See ***tid*** in the **RTRV-HDR** command. Starting in Release 2.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).

Table 3-69 **`ENT-CRS`** Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
loca2	Identifies the ***tid*** associated with *in_aid2* of the protection leg of a path-protected cross connection. This parameter Is required for BLSR THROUGH, INTER-BLSR and DROP connections. When setting up a cross connection where the source or destination is a member of a BLSR protection group, it is required that the user enter non-empty string as the loca value. This parameter is not applicable to ADD and non-BLSR connections Values: See ***loca***.
locz	Identifies the ***tid*** associated with ***out_aid*** of the node at which service is **dropped** from the BLSR. This is a required parameter for BLSR THROUGH, INTER-BLSR, and ADD connections. A 2-way cross connection is considered to be an ADD if ***in_aid*** is a non BLSR trib. This parameter is not applicable to DROP and non-BLSR connections. Values: See ***loca***.
omode	Specifies the output mode for a **1WAY** or the input to output direction of a **2WAY** cross connect. Values: ■ **NORM** (default) ■ **IDLE**/**UNEQ** ■ **AIS**. Note: Output mode **IDLE** is for DS3 tributaries and **UNEQ** is for tributaries from SONET/SDH interfaces.
ppbv	Path Protection Behavior parameter is used to set the initial values of the path protection switching parameters for the path protection group that is established as part of a path-protected atomic cross connection. Values: ■ **NN** (rme=DISABLE, hte=DISABLE) ■ **RN** (rme=ENABLE, hte=DISABLE) ■ **NH** (rme=DISABLE, hte=ENABLE) ■ **RH** (rme=ENABLE, hte=ENABLE). The initial value is **NN** for UPSR; for DNI/DRI, the initial value is **RN**. ***ppbv*** is not returned by **`RTRV-CRS`**. **`RTRV-PROTN-GRP`** should be used to return *rme*, *hte*.
ppgname	Path Protection Group Name is a user-defined string that identifies a path protection group. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes.

Table 3-69 **`ENT-CRS`** Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
xcappl	Application indicates one of the applications that are supported by compound cross-connection topologies. Values: **0-255** Suggest assignments: 0) Unknown 1) 1-Way Point-to-Point 2) 1-Way Path-Protected 3) 1-Way Adjunct Path-Protected 10) 2-Way Point-to-Point 20) UPSR (or SNCP Ring) Add, Drop 21) UPSR (or SNCP) Ring-to-Ring, Single Node Interconnection, Same NE 22) UPSR (or SNCP) Drop, 1-Way Broadcast 30) Logical Ring (or SNCP) Add, Drop 40) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Node 41) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE 42) Ring Interworking, Dual Transmit, BLSR (or MS-SPRing) Terminating Node 50) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring) 51) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring) Nodes in Same NE 60) 1-Way Broadcast -- note: this is with N greater than or equal to 2. Given a specific value, the GUI of the Element Manager should display the appropriate text string, selecting either BLSR or MS-SPRing and either UPSR or SNCP, depending on the provisioning of the Interface Standard Default.
xcnum	Cross-Connection Number identifies each cross-connection leg in a specific compound cross connection. Any nine digit number is acceptable. Recommended format of the nine digits are allocated as follows (where the digit values pertain to ***out_aid***): two digits for the bay, one digit for the shelf, two digits for the slot, one digit for the port, and three digits for the trib.The default value is 000000000. For the non-numeric slots, the slot digits shall be assigned as follows: STM64: trw=90 and tre=91 BWM 10G shelf: tr1=90, tr2=91, tr3=92, tr4=93 2.5G/10G: trw=90, tre=91 10G 4F: tr1=90, tr2=91, tr3=92, tr4=93.

Table 3-70 **ENT-CRS** Input *state_block* Parameters

Parameter Name	Description
state_block	
pst	Specifies the Primary State. THIS PARAMETER IS NOT USED IN THIS COMMAND. A comma (,) is placed in this position to indicate that this is not in use.

OUTPUT FORMAT

If the **ENT-CRS** 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 the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of **ENT-CRS** command for a 1WAY VC3 BLSR THROUGH connection:

```
ENT-CRS-VC3:LT-WBM-789:4-2-#-#-02-1-1,4-2-#-#-06-1-1:123456::1WAY:
LOCA=LT-WBM-345,LOCZ=LT-WBM-567;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example shows a successful completion of **`ENT-CRS`** command of a 2WAY VC3 non-BLSR connection:

```
ENT-CRS-VC3:LT-WBM-789:2-1-#-#-14-2,1-1-#-#-1-13-1:123456:::RTNOMODE=
NORM;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example illustrates the **`ENT-CRS`** commands that can be used to establish **Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Node Cross Connections**. Since the Drop-and-Continue connects with another ring, source and destinations TIDs (loca_21 and locz_21) must be utilized in the cross connections.

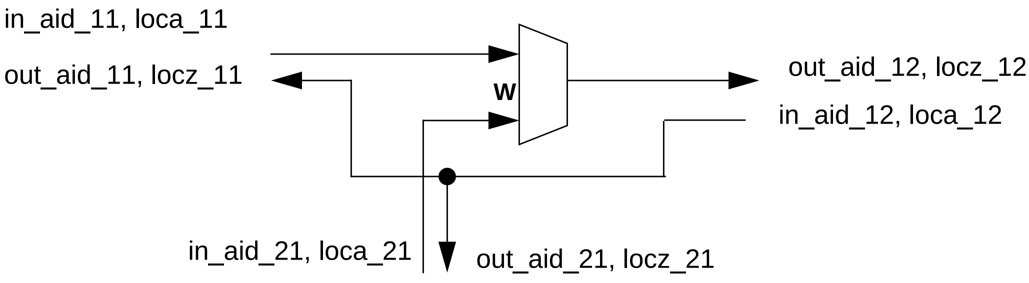


Table 3-71 Drop-and-Continue, BLSR (or MS-SPRing) Primary Node Cross Connections

cct	in_aid	out_aid	in_aid2	loca	loca2	locz
1WAYPPROT	in_aid_21	out_aid_12	in_aid_11	loca_21	loca_11	locz_12
1WAY (through)	in_aid_12	out_aid_11		loca_12		locz_11
1WAY (drop)	in_aid_12	out_aid_21		loca_12		

The following example illustrates the **ENT-CRS** commands that can be used to establish **Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE Cross Connections**.

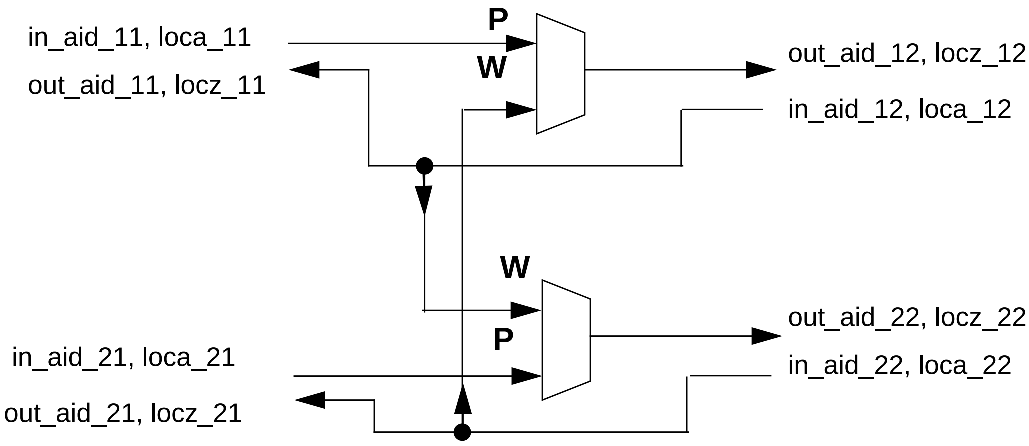


Table 3-72 Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE

cct	in_aid	out_aid	in_aid2	loca	loca2	locz
1WAYPPROT	in_aid_22	out_aid_12	in_aid_11	loca_22	loca_11	locz_12
1WAY (through)	in_aid_12	out_aid_11		loca_12		locz_11
1WAYPPROT	in_aid_12	out_aid_22	in_aid_21	loca_12	loca_21	locz_22
1WAY (through)	in_aid_22	out_aid_21		loca_22		locz_21

The following example illustrates the **ENT-CRS** commands that can be used to establish **UPSR (or SNCP Ring) Add, Drop Cross Connections**. Since the Add, Drop tributaries are not in BLSR protection groups, source and destinations TIDs are not required for the Add, Drop.

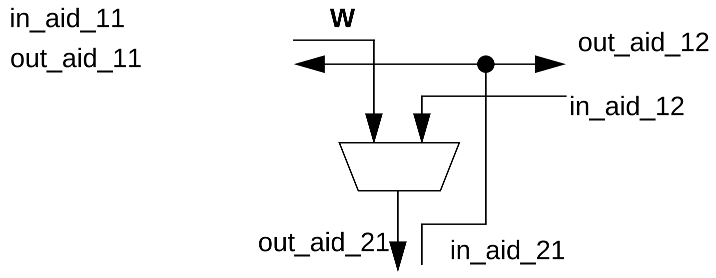


Table 3-73 UPSR (or SNCP Ring) Add, Drop Cross Connections

cct	in_aid	out_aid	in_aid2
1WAYPPROT	in_aid_11	out_aid_21	in_aid_12
1WAY	in_aid_21	out_aid_11	
1WAY	in_aid_21	out_aid_12	

The following example illustrates the **ENT-CRS** commands that can be used to establish **UPSR (or SNCP Ring) Ring-to-Ring, Single Node Interconnection, Same NE Cross Connections**.

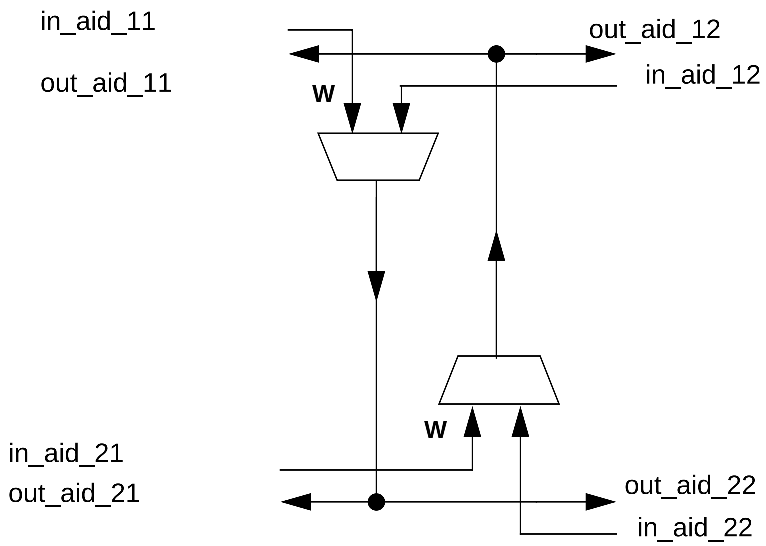


Table 3-74 UPSR (or SNCP Ring) Ring-to-Ring, Single Node Interconnection, Same NE

cct	in_aid	out_aid	in_aid2	appg_aid
1WAYPPROT	in_aid_11	out_aid_21	in_aid_12	
ADJCTPPROT	in_aid_11	out_aid_22	in_aid_12	out_aid_21
1WAYPPROT	in_aid_21	out_aid_11	in_aid_22	
ADJCTPPROT	in_aid_21	out_aid_12	in_aid_22	out_aid_11

For this **ENT-CRS** example, the following AID values will be used:

in_aid_11, out_aid_11: 1-1-u-#-2-1-4
in_aid_12, out_aid_12: 1-1-u-#-10-1-4
in_aid_21, out_aid_21: 1-1-u-#-4-1-4
in_aid_22, out_aid_22: 1-1-u-#-12-1-4

```
ENT-CRS-STS1:LT-WBM-789:1-1-u-#-2-1-4,1-1-u-#-4-1-4:123456::1WAYPPR
OT,1-1-u-#-10-1-4:xcappl=21,xcnum=011031004,ppgname="main office";

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;

ENT-CRS-STS1:LT-WBM-789:1-1-u-#-2-1-4,1-1-u-#-12-1-4:123456::ADJCTPPRO
T,1-1-u-#-10-1-4,1-1-u-#-4-1-4:xcappl=21,xcnum=011111004;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;

ENT-CRS-STS1:LT-WBM-789:1-1-u-#-4-1-4,1-1-u-#-2-1-4:123456::1WAYPPR
OT,1-1-u-#-12-1-4:xcappl=21,xcnum=011011004,ppgname="branch lab";

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;

ENT-CRS-STS1:LT-WBM-789:1-1-u-#-4-1-4,1-1-u-#-10-1-4:123456::ADJCTPPRO
T,1-1-u-#-12-1-4,1-1-u-#-2-1-4:xcappl=21,xcnum=011091004;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **ENT-CRS** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **INPUT, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response (for a specific product release, some of these conditions might not be applicable):

- The specified adjunct XC is not associated with an existing path protection group.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following condition will cause an IENE error response:

- One or more of the logical tributaries specified by the command’s AIDs does not exist.

The **INPUT, Data, RanGe** error response is shown below:

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

The following condition will cause an IDRG error response:

- The port/pack does not support the rate implied by the ranged input AID.

The **INPUT, Data Not Consistent** error response is shown below:

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

The following list identifies conditions that will cause an IDNC error response (for a specific product release, some of these conditions might not be applicable):

- The specified tributary does not support the indicated XC rate.
- The tributary boundary is inconsistent with the indicated XC rate.
- The bridging rate is not the same as the existing XC input rate.
- Logical input AIDs are not unique.
- Inconsistent identifier fields (logical and physical AIDs) exist.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- The operational state of the required equipment is not enabled.
- The output is already cross connected.
- Too many cross connections are originating from the same tributary.
- Improper bridging of path-protected cross connection exists.
- The input port is provisioned for fixed-rate mode, but the specified cross-connection rate differs from the rate indicated by the tributary input signal rate parameter or by the tributary unequipped output signal rate parameter.
- Cross-connection rate is too large for 2F BLSR/MSSPRING application.
- Establishing a through connection on tributary with existing reservation.
- Establishing XC to protection tributary of a 1+1 optical protection group, 1xN optical protection group.
- Establishing XC to a tributary of a 1XNELEC protection pack.
- The port directionality parameter of the DS3 port does not permit a cross connection.
- The tributary has an existing cross-connect loopback.
- The tributary has an existing test access connection or it is a test port.
- The tributary has an existing reservation and the attempted cross connection is path protected.
- The tributary has an existing reservation and the attempted cross connection is adjunct path protected.
- The path-protected XC has inputs from ports with different interface standards.
- The path-protected XC has OC48 inputs from different shelves.
- The adjunct path-protected XC has OC48 inputs from different shelves.
- Output connectivity of path-protected cross connection is not supported.
- Output connectivity of adjunct path-protected cross connection is not supported.
- The rate is not consistent with the existing reservation.
- The source TID is not consistent with an existing cross connection that uses the same input.
- The TID is not consistent with the existing reservation.

The **Status, All Resources Busy** error response is shown below:

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

The following condition will cause an SARB error response (for a specific product release, some of these conditions might not be applicable):

- Intra system capacity exceeded (implies a multi-shelf system).

The **Status, System Resources Exceeded** error response is shown below:

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

The following condition will cause an SSRE error response (for a specific product release, some of these conditions might not be applicable):

- Path protection group name limit exceeded.

RELATED TL1 MESSAGES

DLT-CRS

ED-CRS

ED-EQPT

ENT-EQPT

RTRV-CRS

RTRV-rr

RTRV-STATE-EQPT

NAME

ENT-EQPT: Enter Equipment

The **ENT-EQPT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-EQPT:*tid*:*aid*:*ctag*:::[*spec_block*];

DESCRIPTION

The **ENT-EQPT** command manually creates and provisions equipment components in the system database.

A shelf must be created first before its circuit packs can be created.

The **ENT-EQPT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-75 **ENT-EQPT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to **RTRV-HDR** command for input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is the address of the equipment component to be created. Values: ■ I/O bay AID ■ I/O shelf AID

Table 3-75 **`ENT-EQPT`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ Slot AID. The keyword "all" is allowed in the slot AID.
ctag	Correlation Tag. Refer to **`RTRV-HDR`** command for input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-76 **`ENT-EQPT`** Input *spec_block* Parameters

Parameter Name	Description
eqptpn	Equipment ASAP Profile Name. This parameter is available starting in Release 3. This parameter is only allowed with an I/O shelf AID. Value: an alphanumeric string with a maximum of 24 characters.
nvmname	Circuit Pack Name. This parameter is available starting in Release 1. This parameter is only allowed with a slot AID. Values: See the following table for the values of this parameter.
nvmqual	Circuit Pack Qualifier. This parameter is available starting in Release 1. This parameter is only allowed with a slot AID. This parameter is required when creating a slot circuit pack. Values: See the following table for the values of this parameter.
oncpi	ON Cable Pair Identifier. This parameter is available starting in Release 1. This parameter is only allowed with an electrically connected I/O shelf AID. Values: **1**-**4**.
shlftp	Shelf Type. This parameter is available starting in Release 1. This parameter is required when the ***aid*** is an I/O shelf AID. Values: ■ **TYPE2GIO** ■ **TYPE10GIO**.

The following circuit pack table lists the circuit pack names and qualifiers. If a value is not listed for a circuit pack name, it means that the corresponding ***name*** or ***nvmname*** parameter is omitted when referring to that circuit pack. This list of circuit packs is not release dependent.

Table 3-77 Circuit Pack Table (Sheet 1 of 2)

Circuit Pack Name	Circuit Pack Qualifier
GE1	SX2
GE1	LX2
GE1	VLX2
ADJCTL	DCCEI
CTL	SYS50DM
OBA10G	15LR1
OBPA10G	15VR1
OC3STM1	13LR4
OC3STM1	13SR4
OC3STM1	13SR8
OC12STM4	13LR2
OC12STM4	15LR2
OC12STM4	13SR2
OC48STM16	13LR1
OC48STM16	13SR1
OC48STM16	15LR1
OC48STM16	DWDM01,DWDM02, …, DWDM16
OC48STM16	POU9590, POU9570 , POU9550, POU9530, POU9490, POU9470, POU9450, POU9430, POU9370, POU9350, POU9330, POU9310, POU9270, POU9250, POU9230, POU9210
OC48STM16	WDM9585, WDM9580, …, WDM9190
OC192STM64	15IR1
OC192STM64	15IRS1

Table 3-77 Circuit Pack Table (Sheet 2 of 2)

Circuit Pack Name	Circuit Pack Qualifier
OC192STM64	15SR1
OC192STM64	POU9590, POU9570 , POU9550, POU9530, POU9490, POU9470, POU9450, POU9430, POU9370, POU9350, POU9330, POU9310, POU9270, POU9250, POU9230, POU9210
OC192STM64	WDM9580, WDM9570, …, WDM9190
PPROC	STS192
PPROC	STS384
STM1E	4
STM1EE4	4
SWITCH	STM1EE4
SWITCH	STS576
SWITCH	STS768
TMG	STRAT3

OUTPUT FORMAT

If the **ENT-EQPT** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **ENT-EQPT** command:

```
ENT-EQPT:LT-WBM:1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-EQPT** command.

The **INPUT, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response:

- Illegal BAY ID Syntax
- Bad ON Port ID
- Bad BSW Port ID
- Illegal Shelf Type
- Illegal Pproc Port ID in this Configuration

The **Equipage, Not EQuipped** error response is shown below:

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

The following condition will cause an ENEQ error response:

- Mandatory 10G Shelf Not Yet Created.

The **Status failure, incorrect equipage** error response is shown below:

```
   sid date time
M  ctag DENY
   EATN
   /* Status, incorrect equipage */
;
```

The following list identifies conditions that will cause an EATN error response:

- Unrecognized CP for this Slot
- Unexpected CP in this Configuration.

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ED-STATE-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ENT-FECOM-LAN: Enter Far-End Communications for LAN

The **ENT-FECOM-LAN** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 2.0, the user privilege code is
User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-FECOM-LAN:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ENT-FECOM-LAN** command can be initiated by users to enable/disable the IAO-LAN interface.

The **ENT-FECOM-LAN** command generates a REPT DBCHG message.

INPUT PARAMETERS

In the following parameter descriptions, "communications software reset" means that the DCC circuit pack is reset. The provisioned values do not take effect until after the reset.

Table 3-78 **ENT-FECOM-LAN** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-78 **`ENT-FECOM-LAN`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is applicable starting in Release 1. This identifies the LAN circuit pack address. Value: circuit pack AID. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-79 **`ENT-FECOM-LAN`** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
extllm	External LAN Max Link Metric. This parameter is applicable starting in Release 2.1. This is the maximum value of a routing metric assignable to a circuit. Values: **1**-**63**. The initial value is **14**. Starting from Release 4.0 this paprameter is no longer supported.
extltss	External LAN TARP Storm Suppression. This parameter is available starting in Release 4. Modification of this parameter causes a communications software reset. Values: ■ **ENABLE** (initial value) ■ **DISABLE**
intlanstat	This parameter is applicable starting in Release 2.1. This parameter indicates whether communication over the internal LAN channel is enabled or disabled. Note that, if this parameter is disabled, it could cause all external management communications to the network element to be lost. Values: ■ **ENABLE** (default) ■ **DISABLE**.

Table 3-79 **`ENT-FECOM-LAN`** Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
intllm	Internal LAN Max Link Metric. This parameter is applicable starting in Release 2.1. This is the maximum value of a routing metric assignable to a circuit. Values: **1**-**63**. The initial value is **14**. Starting from Release 4.0 this paprameter is no longer supported.
lanrpri	LAN Designated Router Priority. This parameter is available starting in Release 2.1. If the channel is associated with an active LAN port, this parameter sets the relative priority for the node in the election of a designated router on the LAN. There is a separate election for each separate LAN (IAO LAN or ON-LAN) to which the node is connected. Values: **1 - 127**. The initial value is **64**.
lanrst	LAN Reset. This parameter is applicable starting in Release 1. This parameter will reset the LAN hardware without resetting the OSI stack or the system and without affecting communications. Values: ■ **YES** ■ **NO** (default). Starting from Release 4.0 this paprameter is no longer supported.
lanstat	This parameter is applicable starting in Release 1. This parameter indicates whether communication over the external IAO-LAN channel is enabled or disabled. Values: ■ **ENABLE** (default) ■ **DISABLE**.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

If the **ENT-FECOM-LAN** request is successful, the network element returns the following normal completion response:

```
ENT-FECOM-LAN:LT-WBM:1-1-#-#-dccei-cp:123456:::lanstat=enable,
lanrst=yes;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-FECOM-LAN** command.

RELATED TL1 MESSAGES

RTRV-FECOM-LAN

NAME

ENT-FECOM: Enter Far-End Communications

The **ENT-FECOM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 1, the syntax is:

ENT-FECOM:*tid*:*aid*:*ctag*::*port*[,*dcctype*]:[*spec_block*];

DESCRIPTION

The **ENT-FECOM** command can manually enable or disable a DCC channel. It can also modify the LAPD parameters of an existing DCC channel.

The de-provisioning of any optical ports via the **DLT-EQPT** command will automatically clear/release the current DCC assignment.

If the parameter ***dccstat*** is set to **ENABLE**, a port will be manually associated with a DCC channel and that DCC channel will become active. All LAPD parameters not explicitly set in the command line will be provisioned to initial values.

If the ***dccstat*** parameter is set to **DISABLE**, the specified optical port will no longer be associated with a DCC channel and will not appear in the output of the **RTRV-FECOM** command. The LAPD parameters of the channel will revert back to initial values.

If the ***dccstat*** parameter is omitted, the LAPD parameters of an existing and active DCC channel can be modified.

The **ENT-FECOM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-80 **ENT-FECOM** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 1. This identifies the DCC circuit pack address. Value: circuit pack AID. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
port	Port. This parameter is available starting in Release 1. This parameter indicates the optical (OC-N) port AID that would be using a channel of the DCC circuit pack for far-end communications. Value: Optical (OC-N) port AIDs.
dcctype	This parameter is available starting in Release 1. This parameter specifies whether the values provisioned in the ***spec_block*** refer to the **LINE** or **SECTION** dcc. Values: ■ **SECTION** (default) ■ **LINE**.
spec_block	The following are the ***spec_block*** parameters.

Table 3-81 **ENT-FECOM** Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
	Any parameter that is not listed in the ***spec_block*** of the command line will keep its current value. However, if a DCC is being enabled, all LAPD parameters not explicitly set in the command line will be provisioned to initial values.
dccstat	This parameter is available starting in Release 1. This parameter enables or disables communication over the section DCC channel. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-81 **ENT-FECOM** Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
lapdmode	LAPD Mode. This parameter is available starting in Release 4. This parameter provisions the data link service. Values: ■ **AITS** ■ **UITS** (initial value). ■ **AUTO**
lapdrl	This parameter indicates the LAPD Role. When the value is the same on both ends, an alarm will be active. Values: ■ **USER-SIDE** (initial value) ■ **NETWORK-SIDE**. Starting in Release 1, this parameter is available for the Section DCC. Starting in Release 2, this parameter is available for the Line DCC.
l2wait	This parameter sets the LAPD retransmission timer,T200. When this timer expires, retransmission of the frame is initiated. Values: **0.2-25** seconds in **100** msec increments. The initial value is **1** second. Starting in Release 3, this parameter is available for the Section DCC. Starting in Release 3, this parameter is available for the Line DCC. Starting in Release 4.0 the parameter ***l2wait*** is no longer supported
l2rex	This parameter sets the LAPD maximum number of retransmissions, N200, allowed. Values: **1** - **16** in increments of 1. The initial value is **3**. Starting in Release 3, this parameter is available for the Section DCC. Starting in Release 3, this parameter is available for the Line DCC. Starting in Release 4.0 the parameter ***l2rex*** is no longer supported

Table 3-81 **`ENT-FECOM`** Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
l2if	This parameter sets the LAPD transmission window parameter, K. K corresponds to the maximum number of outstanding information frames allowed before expecting an acknowledgment. Values: **1** - **127** in increments of 1. The initial value is **7**. Starting in Release 3, this parameter is available for the Section DCC. Starting in Release 3, this parameter is available for the Line DCC. Starting in Release 4.0 the parameter ***l2if*** is no longer supported
l3mlm	Max Link Metric. This is the maximum value of a routing metric assignable to a circuit. Values: **1**-**63**. The initial value is **20**. Starting in Release 2.1, this parameter is available for the Section DCC. Starting in Release 2.1, this parameter is available for the Line DCC. Starting in Release 3.0 the parameter ***l3mlm*** is no longer supported

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
;
```

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

If the **ENT-FECOM** request is successful, the network element returns the following normal completion response:

```
ENT-FECOM:LT-WBM:1-1-#-#-dccei-cp:123456::1-1-#-#-04-1:lapdrl=
network-side;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-FECOM** command.

RELATED TL1 MESSAGES

RTRV-FECOM

NAME

ENT-IP-MAP: Enter TCP/IP map

The **ENT-IP-MAP** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL):S3

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-IP-MAP:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

The **ENT-IP-MAP** command creates entries in the TCP/IP subnetwork application context map. The **ENT-IP-MAP** command allows an OS to specify a management association to a network element over TCP/IP.

The **ENT-IP-MAP** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-82 **ENT-IP-MAP** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-83 `ENT-IP-MAP` Input *spec_block* Parameters

Parameter Name	Description
acid	OS Application Context ID. This parameter is available starting in Release 4. This is a value of up to twenty-three alphanumeric characters, which is the application context ID to be assigned to the particular IP address. If this parameter is omitted, the current value is not changed. Values: ■ **TL1MAINTENANCE** ■ **TL1MEMORYADMINISTRATION** ■ **TL1TEST** ■ **TL1OTHER1** ■ **TL1PEERCOMM**. The default ***acid*** value for all addresses is **TL1PEERCOMM**. The same ACID can be mapped to more than one address.
ip	IP Address for the OS. This parameter is available starting in Release 4. This is a required parameter. Value: A 32-bit address consisting of four dot-separated decimal numbers ranging from 0 to 255. More than one IP address can be mapped by executing the **`ENT-IP-MAP`** command multiple times.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

The output parameters *sid*, *date*, *time*, and *ctag* included in the normal completion response are specified in the **OUTPUT PARAMETERS** section of the **`RTRV-HDR`** command.

EXAMPLE INPUT/OUTPUT

The following example shows a mapping of an IP address:

```
ENT-IP-MAP:LT-WBM::123456:::acid=tl1memoryadministration,
ip=198.78.46.8;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **ENT-IP-MAP** command.

RELATED TL1 MESSAGES

DLT-IP-MAP

ED-NE

RTRV-NE

RTRV-IP-MAP

NAME

ENT-IP-ROUTE: Enter IP Route

The **ENT-IP-ROUTE** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-IP-ROUTE:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ENT-IP-ROUTE** command provisions the IP-Tunneling service. The command is used to set the manual part of the IP routing table. Provisioning of multiple entries in the routing table requires multiple executions of the command.

The **ENT-IP-ROUTE** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-84 **ENT-IP-ROUTE** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	This parameter is available in Release 1.0. Value: datacom AID (DCC circuit pack AID). See AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-85 **`ENT-IP-ROUTE`** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
dest_ip	Destination IP address. Made up of four dot-separated decimal numbers ranging from 0 to 255. This is a mandatory parameter.
dest_mask	Destination Mask. Values: **0**…**32**. This is a mandatory parameter.
nxthopadr	Next_Hop_Address. Values: ■ **IPADDRESS** An IP Address. It is made up of four dot-separated decimal numbers ranging from 0 to 255, e.g., 192.35.20.34. ■ **NSAP** An NSAP is a hexadecimal representation of 8-20 octets, all concatenated (thus 16-40 hexadecimal digits, an even number), e.g., 39081500455f7c56458a01. This is a mandatory parameter.
nxthopport	Next_Hop_Port. Values: ■ **LAN** ■ **CLNP_TUNNEL** This is a mandatory parameter.
owner	Starting in Release 4 this parameter indicates the owner of the table entry. - in case of LOCAL, the ENT-IP-ROUTE is used to change the editable parameters of a local entry: TAP advertise and TAP cost.All other parameters shall be identical to those of the local route to be changed. - in case of MANUAL, the ENT-IP-ROUTE is used to create a new entry. The combination (dest_ip, dest_mask, nxthopaddr) may not exist yet in the manual entry list. Value(s): ■ **LOCAL** ■ **MANUAL**. This is a mandatory parameter.

Table 3-85 **ENT-IP-ROUTE** Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
tapadver	TAP_ADVERTISE. Values: ■ **YES** (Default) ■ **NO**. If owner=LOCAL,*tapadver* shall not be set to the default if the parameter is not specified in the TL1 command.
tapcost	TAP_COST. Values: ■ **0** … **65535**. The default value is **20**. If owner=LOCAL,*tapcost* shall not be set to the default if the parameter is not specified in the TL1 command.

OUTPUT FORMAT

After receiving the **ENT-IP-ROUTE** command, 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** command section of the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following is an example of the **ENT-IP-ROUTE** command:

```
ENT-IP-ROUTE:LT-WBM:1-1-#-#-dcc-cp:123456:::dest_ip=192.168.100.1,
dest_mask=24,nxthopport=LAN,nxthopadr=192.160.200.20,owner=
MANUAL,tapadver=NO;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The error messages listed there also apply to the **ENT-IP-ROUTE** command.

RELATED TL1 MESSAGES

DLT-IP-ROUTE

ED-IP-TUNNEL

RTRV-IP-ROUTE

RTRV-IP-TUNNEL

NAME

`ENT-PROTN-GRP:` Enter Protection Group

The **ENT-PROTN-GRP** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-PROTN-GRP:*tid*::*ctag*::*protype*:*spec_block*;

DESCRIPTION

Protection groups are used in protection switching. A protection group is made up of one or more working (service) entities and a protection entity. In addition to the entities that comprise the protection group, the protection group has parameters that affect the characteristics of the protection group, such as whether or not the protection switching is revertive.

The **ENT-PROTN-GRP** command allows one to create a user-provisioned association of optical interface ports which is used in protection. Protection groups also determine the set of tributaries from and to which the user can provision cross connections. If a circuit pack contains more than one optical port, the user can provision the type of protection for each port independently of the other ports. Unprotected operation is supported for optical interface ports that are not in a protection group.

When creating a protection group, the following must be true:

- The individual ports must not already be in another protection group.
- There are no existing cross connections on the ports.
- All ports in a protection group must be within one shelf.
- Each port in a protection group must be on a different circuit pack.

Some types of protection groups are created automatically by the system. **ENT-PROTN-GRP** cannot be used to create the following types of protection groups:

- **1xNELEC** 1xN equipment protection. Protection group AIDs for this protection type include ds3ec1grp and estm1ee4grp.
- **EQPTTMG** Timing equipment protection
- **PATHDRI** Path DRI.

Related commands: **DLT-PROTN-GRP** can be used to delete any protection group that was created via **ENT-PROTN-GRP**. **ED-PROTN-GRP** edits attributes associated with a protection group. **RTRV-PROTN-GRP** retrieves protection group information.

The **ED-PROTN-TYPE** command is similar to the **ED-PROTN-GRP** command. To understand the difference, consider a specific type of protection group - PATHDRI. Assume that two protection groups of this type have been created: path1 and path2. **ED-PROTN-GRP** can be used to modify the parameters of a specific protection group, for example, the parameters of the group named path1. **ED-PROTN-TYPE** can be used to modify parameters values that apply to the protection group type as a whole. For example, for the protection group type PATHDRI the "wait to restore time" parameter wtr is applied to the entire group and it can only be modified by **ED-PROTN-TYPE**. That is, the protection groups path1 and path2 must have the same value of wtr. The command **RTRV-PROTN-TYPE** retrieves the values of any parameters than can be modified via **ED-PROTN-TYPE**.

Switching from a protection group's service entity to a protection entity, or vice versa, is controlled by physical events such as the failure of an entity. In addition, the following commands can be used to cause a protection switch: **OPR-PROTNSW** and **RLS-PROTNSW**. When there is a protection switch state change, autonomous messages are created: either **REPT EVT** or **REPT SW**. Most of the protection switch autonomous messages are conveyed via **REPT EVT**. **REPT SW** autonomous messages are used for protection switches of a duplex equipment unit pair.

The **ENT-PROTN-GRP** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-86 **ENT-PROTN-GRP** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-86 ENT-PROTN-GRP Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
protype	Protection Type. Values: ■ **1+1** (starting in Release 1) 1+1 is for optical protection. ■ **2F** (starting in Release 1) ■ **1xNOPT** (starting in Release 3)
spec_block	See the following "**ENT-PROTN-GRP *spec_block*** Parameters" table.

Table 3-87 ENT-PROTN-GRP *spec_block* Parameters (Sheet 1 of 3)

Parameter	Description / PROTYPE	Value
east	East Group Member. This parameter is required when ***protype*** has one of the following values; otherwise, this parameter is not allowed:	
	■ **2F** (starting in Release 1).	port AID
pgid	Protection Group ID. Two-digit number that is required for creating facility (port) protection groups. For values less than 10, the leading zero is optional. For example, either 07 or 7 is acceptable. If the user omits the leading zero, the software will prepend it.	**01**-**99**
protn	Protection Group Member. This parameter is required when ***protype*** has one of the following values; otherwise, this parameter is not allowed:	
	■ **1+1** (starting in Release 1).	port AID
	■ **1xNOPT** (starting in Release 3).	port AID

Table 3-87 ENT-PROTN-GRP *spec_block* Parameters (Sheet 2 of 3)

Parameter	Description / PROTYPE	Value
protocol	Protocol. 1+1 optical protection groups can have one of the following protocols: unidirectional (1+1_UNI), bidirectional (1+1_BIDIR), or optimized bidirectional (1+1_OPTM). One or more of these protocols may not be available for a specific product's release. This parameter is applicable to the following ***protype(s)***:	
	■ **1+1** (starting in Release 1).	**1+1_UNI**, **1+1_BIDIR**
	■ **1+1** (starting in Release 2.1)	**1+1_OPTM**
	■ **1xNOPT** (starting in Release 3)	**1xN_UNI**, **1xN_BIDIR**
rid	Ring Identification Name. Storage and retrieval of the ***rid*** is case sensitive, but actual use of the ***rid*** to determine the corresponding protection group is case insensitive. This parameter is required and is only allowed when ***protype*** has one of the following values:	
	■ **2F** (starting in Release 1)	ASCII string of up to 15 characters from the TID character set
	Starting in Release 3.0:	The value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
rme	Revertive Mode Enable. This parameter is applicable to the following ***protype(s)***:	
	■ **1+1** (starting in Release 1).	**ENABLE**, **DISABLE**
	■ **1xNOPT** (starting in Release 3).	**ENABLE**
west	West Group Member.	See *east*.

Table 3-87 ENT-PROTN-GRP *spec_block* Parameters (Sheet 3 of 3)

Parameter	Description / PROTYPE	Value
wkg	Working Group Member. The definition, which section shall be working and which one shall be protection, is given by the user when provisioning the protection group via **ENT-PROTN-GRP**, and is fixed during the lifetime of the protection group. The only way to change the AIDs assigned to *wkg*, *protn* is to delete the protection group and then reprovision. This parameter is required when ***protype*** has one of the following values; otherwise, this parameter is not allowed: ■ **1+1** (starting in Release 1).	port AID
wkg1… ***wkg12***	Working Group Member. A minimum of at least one of these parameters is required when ***protype*** has one of the following values. If the parameters are entered with gaps, (for example, *wkg1*, *wgk2*, *wkg4*) the network element will reject the command. ■ **1xNOPT** (starting in Release 3) Starting in Release 3 allowed value is N=1, so the list of parameters can only contain one working group member ***wkg1***.	port AID

OUTPUT FORMAT

If the network element fully complies with the **ENT-PROTN-GRP** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section for a normal completion response. The parameters listed there also apply to the **ENT-PROTN-GRP** command.

EXAMPLE INPUT/OUTPUT

The following example shows the use of **ENT-PROTN-GRP** command to create a **1+1** optical protection group:

```
ENT-PROTN-GRP:LT-WBM::123456::1+1:wkg=1-1-#-#-13-1,protn=1-1-#-#-14-1,
pgid=01;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example shows the use of **ENT-PROTN-GRP** command to create a **2F** protection group:

```
ENT-PROTN-GRP:LT-WBM::123456::2f:east=1-1-#-#-10-1,west=1-1-#-#-08-1,
pgid=03,rid=denver21;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-PROTN-GRP** command. The following additional error responses are also applicable.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response:

- Both an AID and an RID are specified as input parameters and they are inconsistent.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- Ports are not provisioned before port protection group established.
- Ports are protecting one another not in the same shelf.
- Ports are protecting one another not on different circuit packs.
- One or more of the ports is already in a protection group.
- There is an existing cross connection, cross-connect loopback, reservation, or test access connection on the port.
- Ports protecting one another are not all SONET OC-N or not all SDH STM-N.
- There is an unsupported port rate (for this type of protection group).
- The ports do not have the same rate.
- OC-48/STM-16 Ports in a BLSR group are not in adjacent or symmetric pairs of slots.

- OC-192/STM-64 Ports in a BLSR group are not in adjacent or symmetric pairs of slots.
- A subset of *eastwkg*, *eastprotn*, *westwkg*, *westprotn* is specified and that subset is not paired as *eastwkg*, *eastprotn* or *westwkg*, *westprotn* (applies to 4F).
- For 1xN optical protection, the maximum value of N is exceeded.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- Ports not provisioned before port protection group established.
- Ports protecting one another not in the same shelf.
- Ports protecting one another not on different circuit packs.
- One or more of the ports is already in a protection group.
- Ports protecting one another not all SONET OC-N or not all SDH STM-N.
- An unsupported port rate (for this type of protection group).
- The ports do not have the same rate.
- OC-48/STM-16 Ports in a BLSR group not in adjacent or symmetric pairs of slots.
- OC-192/STM-64 Ports in a BLSR group not in adjacent or symmetric pairs of slots.
- A subset of *eastwkg*, *eastprotn*, *westwkg*, *westprotn* is specified and that subset is not paired as *eastwkg*, *eastprotn* or *westwkg*, *westprotn* (applies to 4F).
- For 1xN optical protection, the maximum value of N is exceeded.

RELATED TL1 MESSAGES

DLT-PROTN-GRP

ED-PROTN-GRP

ED-PROTN-TYPE

RTRV-PROTN-GRP

RTRV-PROTN-TYPE

NAME

`ENT-ROLL:` Enter Roll

The **`ENT-ROLL`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

3.

INPUT FORMAT

`ENT-ROLL``-`*`modifier`*`:`*`tid`*`:`*`in_aid`*`,`*`out_aid`*`:`*`ctag`*`:::`*`spec_block`*`;`

DESCRIPTION

The **`ENT-ROLL`** command can be initiated by a user to roll the input of an existing leg of a cross connection from a given tributary to another tributary, while leaving the output unchanged.

The ***modifier*** in the **`ENT-ROLL`** command indicates the rate on which the **`ENT-ROLL`** command acts.

The number of cross connections originating from the same tributary is restricted to two. The tributary to which the roll cross connection is intended may have to be free from any of the following failure/alarm conditions: AIS-P, LOP-P, UNEQ, B3 signal degrade and J1 mismatches.

The **`ENT-ROLL`** command generates a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-88 **ENT-ROLL** Input Parameters

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the enter roll command is to act. Values: ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1) ■ **VC416C** (starting in Release 2).
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
in_aid	Input Access Identifier. See the AID table in OSEG Appendix A. Values: tributary AID. Startting form Release_4.0, it is not allowed to assign a vcgtrib_aid value to this parameter.
out_aid	Output Access Identifier. See the AID table in OSEG Appendix A. Values: tributary AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-89 **ENT-ROLL** Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
newinaid	Specifies the new input tributary AID to which the cross connection has to be rolled from its existing input AID. Values: tributary AID. Startting form Release_4.0, it is not allowed to assign a vcgtrib_aid value to this parameter.

Table 3-89 **ENT-ROLL** Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
newloca	Specifies the new source TID if the ***newinaid*** is in a BLSR protection group. For non-BLSR connections, this parameter does not apply. Values: Refer to the **RTRV-HDR** command. Starting in Release 2.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
newppgname	Specifies new path protection group name. It is a user-defined string that identifies a path protection group. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes.
xcappl	Application indicates one of the applications that are supported by compound cross-connection topologies. Values: **0**-**255** Suggest assignments: 0) Unknown 1) 1-Way Point-to-Point 2) 1-Way Path-Protected 3) 1-Way Adjunct Path-Protected 10) 2-Way Point-to-Point 20) UPSR (or SNCP Ring) Add, Drop 21) UPSR (or SNCP) Ring-to-Ring, Single Node Interconnection, Same NE 22) UPSR (or SNCP) Drop, 1-Way Broadcast 30) Logical Ring (or SNCP) Add, Drop 40) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Node 41) Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE 42) Ring Interworking, Dual Transmit, BLSR (or MS-SPRing) Terminating Node 50) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring) 51) Ring Interworking, Drop-and-Continue, UPSR (or SNCP Ring) Nodes in Same NE 60) 1-Way Broadcast -- note: this is with N greater than or equal to 2. Given a specific value, the GUI should display the appropriate text string, selecting either BLSR or MS-SPRing and either UPSR or SNCP, depending on the provisioning of the Interface Standard Default.

Table 3-89 **`ENT-ROLL`** Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
xcnum	Cross-Connection Number identifies each cross-connection leg in a specific compound cross connection. Any nine digit number is acceptable. Recommended format of the nine digits are allocated as follows (where the digit values pertain to ***out_aid***): two digits for the bay, one digit for the shelf, two digits for the slot, one digit for the port, and three digits for the trib.The default value is 000000000. For the non-numeric slots, the slot digits shall be assigned as follows: STM64: trw=90 and tre=91 BWM 10G shelf: tr1=90, tr2=91, tr3=92, tr4=93 2.5G/10G: trw=90, tre=91 10G 4F: tr1=90, tr2=91, tr3=92, tr4=93.

OUTPUT FORMAT

If the **`ENT-ROLL`** 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 the **`RTRV-HDR`** command.

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of an **ENT-ROLL** command. In this example, an existing cross connection is being rolled to a tributary that is in a BLSR protection group:

```
ENT-ROLL-VC3:LT-WBM-789:4-2-#-#-02-1-1,4-2-#-#-06-1-1:123456:::NEWINAI
D=5-1-#-#-2-2-1, NEWLOCA=LT-WBM-456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

The following example shows a successful completion of an **ENT-ROLL** command of a non-BLSR connection:

```
ENT-ROLL-VC3:LT-WBM-789:2-1-#-#-14-2,1-1-#-#-1-13-1:123456:::NEWINAID=
5-1-#-#-2-2-1;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-ROLL** command. The following additional error responses are also applicable.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following list identifies conditions that will cause an IENE error response:

- One or more of the tributaries specified by the command's AIDs does not exist.
- The specified cross connection does not exist.

The **INPUT, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The specified rate is not equivalent to the rate of the existing cross connection.

The **INPUT, Data Not Consistent** error response is shown below:

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

The following list identifies conditions that will cause an IDNC error response:

- The specified tributary does not support the indicated XC rate.
- The tributary boundary is inconsistent with the indicated XC rate.
- The bridging rate is not the same as the existing XC input rate.
- Inconsistent identifier fields (logical and physical AIDs) exist.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- The operational state of the required equipment is not enabled.
- The topology does not allow a roll of cross connections.
- Too many cross connections are originating from the same tributary.
- Improper bridging of path-protected cross connection exists.
- Cross-connection rate is too large for 2F BLSR/MSSPRING application.
- The existing reservation rate is exceeded by the specified reservation rate.
- The new source TID is not the same as the existing source TID.
- Establishing a through connection on tributary with existing reservation.
- Establishing XC to protection tributary of a 1+1 optical protection group or a 1xN optical protection group.
- Establishing XC to a tributary of a 1XNELEC protection pack.
- The port directionality parameter of the DS3 port does not permit a cross connection.
- The tributary has an existing cross-connect loopback.
- The tributary has an existing test access connection or it is a test port.
- The tributary has an existing reservation and the attempted cross connection is path protected.
- The new tributary is failed.
- The path-protected XC has inputs from ports with different interface standards.
- Roll of 1-way path-protected cross connection is with associated 1-way adjunct path-protected cross connection.
- Roll of a cross connection is from a tributary used in a test access connection.
- Roll of a cross connection is from a tributary used in a loopback connection.

- The input port is provisioned for fixed-rate mode, but the specified cross-connection rate differs from the rate indicated by the tributary input signal rate parameter or by the tributary unequipped output signal rate parameter.
- The TID is not consistent with the existing reservation.

The **Status, All Resources Busy** error response is shown below:

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

The following condition will cause an SARB error response (for a specific product release, some of these conditions might not be applicable):

- Intra system capacity exceeded (implies a multi-shelf system).

The **Status, System Resources Exceeded** error response is shown below:

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

The following condition will cause an SSRE error response (for a specific product release, some of these conditions might not be applicable):

- Path protection group name limit exceeded.

The **Status, All Resources Busy** error response is shown below:

```
   sid date time
M  ctag DENY
   SARB
   /* Status, All Resources Busy, Command denied based on path selector
location */
;
```

The following list identifies conditions that will cause an SARB error response:

- Rolling restrictions in support of basic DRI/DNI and UPSR/SNCP
- Rolling restrictions based on the location of the path selector.

RELATED TL1 MESSAGES

ED-CRS

ED-EQPT

ENT-CRS

ENT-EQPT

NAME

ENT-TCA-PROF: Enter TCA Profile

The **ENT-TCA-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-TCA-PROF:*tid*::*ctag*::*pftype*,*pfname*;

DESCRIPTION

The **ENT-TCA-PROF** command allows the user to create a new Performance Monitoring (PM) Threshold Crossing Alert (TCA) profile name. The system supports two default sets of profiles called “Default” and “Default0.” When a new profile name is created, all the threshold values are set to the Default values.

Starting in Release 3.0, the Default0 profile will be changed to NotReported.

General Description of TCA Profiles

The threshold values of PM parameters are stored in TCA profiles. Each port or tributary can have, at most, one TCA profile of a particular profile type (**pftype**) associated with it. The user may create/modify/delete a profile and retrieve its content and the ports that are associated with that profile.

The purpose of using profiles to store threshold values is to reduce the storage space of these values for individual ports or tributaries.

When a new profile name is established by using the **ENT-TCA-PROF** command, all parameters within that profile are set to their Default values. The user may then apply the **ED-TCA-PROF** command to alter the values of this newly established profile or to change its name to a different value. This command may also be used to change the parameters within the Default profile. It may not, however, change the name of the default profiles.

After a profile has been created, it can be assigned to a specific port or tributary by using the **ED-rr** command. Since there is a limited number of profiles that can exist on the system, the **DLT-TCA-PROF** command may be used to delete a profile that is no longer needed.

The **RTRV-TCA-PROF** command may be used to display those profiles that have been created for each type of profile and, if desired, what the specific parameter values are within a given profile name.

Finally, the **RTRV-TCA-ASGNMT** command may be used to retrieve a list of all port or tributary AIDs that have been assigned (through **ED-rr** command) to a specific TCA profile.

The **ENT-TCA-PROF** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-90 **ENT-TCA-PROF** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ **ENET** ■ **HOVC** ■ **PHYSICAL** ■ **RS-MS**
pfname	Profile Name. This parameter indicates the name of the PM TCA profile. This is an alphanumeric character string with a maximum of 24 characters. The first character must be a letter. The system supports two default sets of profiles called “Default” and “Default0.” Default contains non-zero threshold value for each parameter in the profile, and Default0 contains zero threshold value for each parameter in the profile. To see all the default values, refer to the **RTRV-TCA-PROF** command.

OUTPUT FORMAT

If the **ENT-TCA-PROF** command completes successfully, the following message is the normal response:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to the **ENT-TCA-PROF** command as well.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of an **ENT-TCA-PROF** command by the network element:

```
ENT-TCA-PROF:LT-WBM::123456::path,gte;

LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **ENT-TCA-PROF** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response:

- The profile name specified is not valid or too long.

The **Input, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The profile type specified is not valid.

The **Input, Entity Already Exists** error response is shown below:

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

The following condition will cause an IEAE error response:

- A profile of the same type with the same name already exists.

The **Status, System Resources Exceeded allowed limit exceeded** error response is shown below:

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

The following condition will cause an SSRE error response:

- Maximum number of profiles exceeded.

RELATED TL1 MESSAGES

DLT-TCA-PROF

ED-rr

ED-TCA-PROF

RTRV-TCA-ASGNMT

RTRV-TCA-PROF

NAME

ENT-ULS: Enter Upper Layer Stack

The **ENT-ULS** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-ULS:*tid*:*aid*:*ctag*::*type*:*spec_block*;

DESCRIPTION

The **ENT-ULS** command sets fields in the Transmission Control Protocol/Internet Protocol (TCP/IP). TCP/IP provisioning consists of setting the IP address, subnet mask, default router address and port numbers.

The **ENT-ULS** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

In the following parameter descriptions, “communications software reset” means that the DCC circuit pack is reset. The provisioned values do not take effect until after the reset.

Table 3-91 **ENT-ULS** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-91 **ENT-ULS** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	This parameter is available starting in Release 4. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
type	This parameter determines that the TCP/IP fields will be provisioned by the **ENT-ULS** command. Value(s): ■ **IP**
spec_block	The following are the ***spec_block*** parameters.

Table 3-92 **ENT-ULS** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
ip_ad	IP Address. This parameter is available starting in Release 4. This parameter belongs to IP type. This is the 32-bit IPv4 address of the system. Modifying this parameter causes a communications software reset. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255. This parameter has no value until provisioned by the user.
ip_drad	IP Default Router Address. This parameter is available starting in Release 4. This parameter belongs to IP type. This is the 32-bit IPv4 default router address of the system and is an optional parameter. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255. This parameter has no value until provisioned by the user.
ip_snm	IP Subnet Mask. This parameter is available starting in Release 4. This parameter belongs to IP type. This is the 32-bit IPv4 subnet mask of the system. Modifying this parameter causes a communications software reset. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255. This parameter has no value until provisioned by the user.

Table 3-92 **`ENT-ULS`** Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
lv_port	Length Value Port. This parameter is available starting in Release 4. The parameter sets the port number over which the T-TD function is accessible using the Length Value encoding method and is an optional parameter. Modifying this parameter causes a communications software reset. Value: An integer in the range: ■ **0** … **65535**. The initial value is **3081**. NOTE: RFC1700 lists the registered port numbers.
raw_port	This parameter is available starting in Release 4. The parameter sets the port number over which the T-TD function is accessible using raw-mode encoding and is an optional parameter. Modifying this parameter causes a communications software reset. Value: An integer in the range: ■ **0** … **65535**. The initial value is **3082**. NOTE: RFC1700 lists the registered port numbers.
telnet_port	This parameter is available starting in Release 4. The parameter sets the port number over which the T-TD function is accessible using telnet encoding mode and is an optional parameter. Modifying this parameter causes a communications software reset. Value: An integer in the range: ■ **0** … **65535**. The initial value is **3083**. NOTE: RFC1700 lists the registered port numbers.

OUTPUT FORMAT

If the **`ENT-ULS`** request is successful, then the network element returns the following normal completion response:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **ENT-ULS** command by the network element:

```
ENT-ULS:LT-WBM::123456::RM:dsa_nsap=39840F800000007AE0000000001234567
8901200,np_co=us,np_org=abcd1234;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

This is another example:

```
ENT-ULS:LT-WBM::123456::IP:ip_ad=198.78.46.8,ip_snm=255.255.255.128,
ip_drad=198.84.65.20;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-ULS** command.

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

ENT-ULSDCC-L3

ENT-ULSDCC-L4

RTRV-ULS

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

NAME

`ENT-ULSDCC-L3:` Enter Upper Layer Stack DCC Layer 3

The **`ENT-ULSDCC-L3`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

`ENT-ULSDCC-L3``:`*`tid`*`:`*`aid`*`:`*`ctag`*`:::[`*`spec_block`*`];`

DESCRIPTION

The **`ENT-ULSDCC-L3`** command is used to provision the user-settable parameters in Layer 3 of the OSI stack. Layer 3 parameters include user-settable fields of the Network Service Access Point (NSAP) address and the multiple area addresses and enabling of Level 2 Routing.

The NSAP address is required by OSI to provide unique identification within the OSI network and consists of a number of fields, some of which are predefined and some of which are user-settable.

For reference, here is how the 20 octets of the NSAP are subdivided:

Table 3-93 **SONET NSAP Format** (From GR-253)

<-----IDP--->			<--------------------------------------DSP-->																
			<-----------------High Order DSP--------------->																
<-------------------------------Area Address------------------------->																			
AFI	IDI+pad		DFI	ORG			Reserved		RD		Area field		SYSTEM						SEL
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

The **ENT-ULSDCC-L3** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

In the following parameter descriptions, “communications software reset” means that the DCC circuit pack is reset. The provisioned values do not take effect until after the reset.

Table 3-94 **ENT-ULSDCC-L3** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting with Release 1. See the AID table in OSEG Appendix A. Value: datacom AID (DCC circuit pack AID).
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-95 **`ENT-ULSDCC-L3`** Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
l3afi	NSAP Authority and Format Identifier. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 1 octet (2-digit hexadecimal) field to specify the format for the rest of the address. The initial value is **39** hex, which identifies the iso_dcc format.
l3area	NSAP Area Identifier Field. This parameter is available starting with Release 1. This field identifies the area within the Routing Domain to which the NSAP address belongs. Modification of this parameter causes a communications software reset. This parameter has a 2 octet (4-digit hexadecimal) value with the initial value of **0000** hex.
l3dfi	NSAP DSP (Domain Specific Part) Format Identifier. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 1 octet (2-digit hexadecimal) field to specify the format for the rest of the address. The initial value is **80** hex, which identifies the SONET DSP format.
l3idi	NSAP Initial Domain Identifier. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 2 octet (4-digit hexadecimal) field to specify the country code indicating the registration authority responsible for the allocation and assignment of the NSAP address. The initial value is **0000** hex, which identifies the global registration authority.
l3isct	Intermediate System Configuration Timer. This parameter is available starting with Release 1. This field is used when the network element is acting in the Intermediate System role. Values: **10**-**1000** seconds. The initial value is **10** seconds. Starting with Release 4.0 this parameter is no longer supported to improve the connectivity robustness.

Table 3-95 **`ENT-ULSDCC-L3`** Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
l3isisnl	This parameter is available starting in Release 3. This parameter enables or disables the network element specified by the ***tid*** as a Level 2 IS in addition to being a Level 1 IS. Modification of this parameter causes a communications software reset. Values: ■ **L1** — Level 1 (initial value) ■ **L12** — Level 1 and 2 ■ **L12PRC** — Level 1 and 2 with partition repair capability (Value supported in future release)
l3lc	CLNP Lifetime Control parameter. This parameter is available starting with Release 1. The value of this parameter determines whether a received PDU should be forwarded or discarded. Values: **2 - 255** hops. The initial value is **255** hops. Starting with Release 4.0 this parameter is no longer supported to improve the connectivity robustness.
l3lv2is	This parameter is available starting in Release 1. This parameter enables or disables the network element specified by the ***tid*** as a Level 2 IS in addition to being a Level 1 IS. Modification of this parameter causes a communications software reset. Values: ■ **DISABLE** ■ **ENABLE**. The initial value is **DISABLE**. Starting from Release 3.0 the parameter ***l3lv2is*** is replaced by ***l3isisnl***
l3org	NSAP Organization Identifier Field. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 3 octet (6-digit hexadecimal) field used to provision into the NSAP address the allocated Company Code. The initial value for this parameter is **000000** hex.

Table 3-95 **`ENT-ULSDCC-L3`** Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
l3rd	NSAP Routing Domain. This parameter is available starting with Release 1. This NSAP field identifies a unique Routing Domain within an administrative domain. Standard use of this parameter has not been defined in the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. Modification of this parameter causes a communications software reset. This parameter has a 2 octet (4-digit hexadecimal) value with the initial value of **0000** hex.
l3res	NSAP Reserved Field. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 2 octet (4-digit hexadecimal) field that currently has not been assigned a specific purpose by the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. The initial value for this parameter is **0000** hex.

OUTPUT FORMAT

If the network element fully complies with the request, the following completion message will be returned:

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

OUTPUT PARAMETERS

Refer to the **`RTRV-HDR`** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **`ENT-ULSDCC-L3`** command.

EXAMPLE INPUT/OUTPUT

If the **ENT-ULSDCC-L3** request is successful, the network element returns the following normal completion response:

```
ENT-ULSDCC-L3:LT-WBM:1-1-#-#-dccei-cp:123456:::l3org=000000;
   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-ULSDCC-L3** command.

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

ENT-ULSDCC-L4

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

NAME

ENT-ULSDCC-L4: Enter Upper Layer Stack DCC Layer 4

The **ENT-ULSDCC-L4** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-ULSDCC-L4:*tid*:*aid*:*ctag*:::[*spec_block*];

DESCRIPTION

The **ENT-ULSDCC-L4** command is used to provision the user-settable parameters in Layer 4 of the OSI stack. User-settable Layer 4 parameters are used to enter TARP Manual Adjacencies and set TARP Loop Detection Buffer timers.There is a maximum of two provisionable manual adjacencies. Repeat the **ENT-ULSDCC-L4** command to provision the second TARP Manual Adjacency. Layer 4 parameters are also used to enable or disable TARP origination, propagation, and responder functions as well as the TARP/X.500 Gateway (T5GW) function. Other provisionable parameters associated with these functions are set in this command. All Layer 4 parameters that can be provisioned using the **ENT-ULSDCC-L4** command and that are needed for the operation of the system have initial values with the exception of the manual adjacencies. It is not necessary to provision any of the layer 4 parameters for the system to operate in a network.

The **ENT-ULSDCC-L4** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

In the following parameter descriptions, “communications software reset” means that the DCC circuit pack is reset. The provisioned values do not take effect until after the reset.

Table 3-96 **`ENT-ULSDCC-L4`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 1. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
spec_block	The following are the ***spec_block*** parameters.

Table 3-97 **`ENT-ULSDCC-L4`** Input Parameters (Sheet 1 of 4)

Parameter Name	Description
l4ajafi	NSAP Authority and Format Identifier of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 1 octet (2-digit hexadecimal) field to specify the format for the rest of the address. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user.This is a required field when TARP Manual Adjacencies are being provisioned.
l4ajarea	NSAP Area Identifier field of the TARP adjacent network element. This parameter is available starting in Release 1. This field identifies the Area within the Routing Domain to which the NSAP address belongs. This parameter has a 2 octet (4-digit hexadecimal) value with the initial value of an empty value; that is, it has no value until provisioned by the user. This is a required field when TARP Manual Adjacencies are being provisioned.

Table 3-97 **ENT-ULSDCC-L4** Input Parameters (Sheet 2 of 4)

Parameter Name	Description
l4ajdfi	NSAP DSP (Domain Specific Part) Format Identifier of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 1 octet (2-digit hex) field to specify the format for the rest of the address. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. This is a required field when TARP Manual Adjacencies are being provisioned.
l4ajidi	NSAP Initial Domain Identifier of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 2 octet (4-digit hexadecimal) field to specify the country code indicating the registration authority responsible for the allocation and assignment of the NSAP address. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. This is a required field when TARP Manual Adjacencies are being provisioned.
l4ajorg	NSAP Organization Identifier field of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 3 octet (6-digit hex) field used to provision into the NSAP address the allocated Company Code. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user.This is a required field when TARP Manual Adjacencies are being provisioned.
l4ajrd	NSAP Routing Domain field of the TARP adjacent network element. This parameter is available starting in Release 1. This NSAP field identifies a unique Routing Domain within an administrative domain. Standard use of this parameter has not been defined in the standards. This parameter has a 2 octet (4-digit hexadecimal) value with the initial value of an empty value; that is, it has no value until provisioned by the user. This is a required field when TARP Manual Adjacencies are being provisioned.
l4ajres	NSAP Reserved field of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 2 octet (4-digit hex) field that currently has not been assigned a specific purpose by the standards. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user.This is a required field when TARP Manual Adjacencies are being provisioned.

Table 3-97 `ENT-ULSDCC-L4` Input Parameters (Sheet 3 of 4)

Parameter Name	Description
l4ajsys	NSAP System Identification field of the TARP adjacent network element. This parameter is available starting in Release 1. This parameter must be specified for the TARP Manual Adjacency to be entered. It is a 6 octet (12-digit hex) NSAP System Identifier field. This is a required field when TARP Manual Adjacencies are being provisioned.
l4cint	This parameter is available starting in Release 1. This parameter sets the TARP clipping interval. Its value determines the time period in which the maximum number of PDUs, ***l4clim***, can be forwarded before activating the clipping function. Values: **1** - **255** seconds in 1 second increments. The initial value is **12** seconds.
l4clim	This parameter is available starting in Release 1. This parameter sets the TARP clipping limit. It specifies the maximum number of PDUs which can be forwarded in the interval ***l4cint*** seconds. Values: **10** - **2550** PDUs in 10 PDU increments. The initial value is **240** PDUs.
l4etclp	This parameter is available starting in Release 1. This parameter is used to enable or disable the TARP clipping function. It allows TARP PDUs to be dropped whenever the forwarding rate exceeds the maximum as determined by ***l4clim*** and ***l4cint***. Values: ■ **ENABLE** ■ **DISABLE**. The initial value is **DISABLE**. Starting in Release 4.0 the parameters ***l4etclp***, ***l4clim*** and ***l4cint*** are no longer supported. The TARP clipping function is replaced by “External LAN TARP Storm Suppression” controlled by the parameter ***extltss*** see **`ENT/RTRV-FECOM-LAN`**
l4etof	This parameter is used to enable or disable TARP Origination Functions only. This parameter is available starting in Release 3. Changing this parameter will result in a communications software reset. Values: ■ **ENABLE** ■ **DISABLE**. The initial value is **DISABLE**.

Table 3-97 **`ENT-ULSDCC-L4`** Input Parameters (Sheet 4 of 4)

Parameter Name	Description
	Starting with Release 2.0, the initial value is **ENABLE**.
l4etpf	This parameter is used to enable or disable TARP Propagation Functions only. This parameter is available starting in Release 1. Changing this parameter will result in a communications software reset. Values: ■ **ENABLE** ■ **DISABLE**. The initial value is **ENABLE**.
l4etrf	This parameter is used to enable or disable TARP Responder Functions only. This parameter is available starting in Release 1. Changing this parameter will result in a communications software reset. Values: ■ **ENABLE** ■ **DISABLE**. The initial value is **ENABLE**.
l4letm	This parameter is used to provision the TARP Loop Detection Buffer Entry Timer. This parameter is available starting in Release 1. It sets the LDB time period for discarding TARP PDUs after a TARP PDU has been received with a sequence number equal to zero. Values: **1**-**10** minutes. The initial value is **5** minutes.
l4lftm	This parameter is used to provision the TARP Loop Detection Buffer Flush Timer. This parameter is available starting in Release 1. It sets the time period for flushing the TARP Loop Detection Buffer. Values: **1**-**1440** minutes. The initial value is **5** minutes.

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** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **ENT-ULSDCC-L4** command.

EXAMPLE INPUT/OUTPUT

If the **ENT-ULSDCC-L4** request is successful, the network element returns the following normal completion response:

```
ENT-ULSDCC-L4:LT-WBM:1-1-#-#-dccei-cp:123456:::l4etpf=ENABLE;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-ULSDCC-L4** command.

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

ENT-ULSDCC-L3

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

NAME

ENT-USER-SECU: Enter User Security

The **ENT-USER-SECU** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 1.0, the syntax is:

ENT-USER-SECU:*tid*:*uid*:*ctag*::*pid*,,[*upc*]:[*spec_block*];

DESCRIPTION

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

The network element will always have two preinstalled users with full privileges in all functional categories. These two users will be referred to as Administrators (or Superusers). The network element will not allow adding additional administrator type users. It will not be possible to remove either of the original administrator login IDs.

The **ENT-USER-SECU** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-98 **ENT-USER-SECU** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-98 **ENT-USER-SECU** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
uid	Specifies the new user ID (***uid***) name. Refer to the **ACT-USER** command.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
pid	Specifies the password ID for the ***uid***. Refer to the **ACT-USER** command.
upc	User Privilege Code List. This defines which TL1 commands a user is allowed to execute. All TL1 commands are categorized into a functional category: **S** (System administration), **T** (Test access), **M** (Maintenance), **P** (Provisioning), **PM** (Performance monitoring), and **D** (Debug). Within each functional category, there is an authorization level that restricts a user's access to certain commands within the category; a user's level allows access to commands of that level and lower. An **S3** user, for example, can execute all commands with privilege S1, S2, and S3. The ***upc*** parameter is a list of these category/level pairs. If the ***upc*** parameter is omitted, the new user will get the initial values in all the functional categories. If some, but not all, of the functional categories are specified, then the unspecified categories are set to their initial authorization levels. Value: An ampersand (&) separated list from the following set: **P**i, **M**i, **T**i, **S**i, **PM**i, **D**i where "i" is an integer which is the authorization level in that category. The value of i is **0** (low) to **5** (high), except for the **S** category, which only supports levels **1** to **5**. If an authorization level is set to **0**, the user will have no privileges for that functional category. In other words, an authorization level of **0** disables that functional category for that user. The initial authorization level is **1** for all functional categories, except for the **D** category, which has an initial level of **0**.
	<u>Note</u>: '**D**i' is a Lucent-only category which can only be used with a special password. ***uid***s with **D**i as the value of ***upc*** will be unable to set up a successful TL1 session. Upon executing the **ACT-USER** command, this user would be dumped into a debug session where he/she will not be able to pass the additional security tests and execute commands.
spec_block	The following are the ***spec_block*** parameters.

Table 3-99 **ENT-USER-SECU** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
page	Password Aging Interval. This parameter is available starting in Release 2. This parameter specifies the period in days after which the user has to change the password of their account. A value of **0** disables the password aging interval function. The initial value is **90** days. If the parameter is not specified, it retains its current value. Values: ■ **0**, **7**-**999 days**.
screen	Message screening specifies the type of notifications and/or responses that are received by the ***uid***. If no value is specified, the user will receive responses to the uid's own commands only. Any combination of these values may be specified using ampersand (&), with the exception of **NA**. **NA** cannot be combined with any other value. Values: ■ **DBCHG** Establish/Modify/Remove Notifications - report changes in creation of entities/report changes in user provisionable parameters/ report changes in deletion of entities. Reports database changes. User will receive **REPT DBCHG** messages. ■ **STCHG** State Notifications - report changes in user non-provisionable parameters (state changes). User will receive **REPT DBCHG** messages. ■ **PSCHG** Protection Switch Notifications - report protection switch changes. User will receive **REPT EVT** and **REPT SW** messages. ■ **ALARMS** Alarm Notifications. User will receive **REPT ALM ENV**, **REPT ALM**, and **REPT EVT** messages. ■ **NA** DBCHG Notifications for OPS/INE Users per TL1 Memory Administration. ■ **ALL** All Notifications Listed Above. If **ALL** is specified, it is needless to specify other values. If **ALL** is one of the values specified, then NE will disregard the other values.

Table 3-99 **`ENT-USER-SECU`** Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
tmout	Inactivity Timeout Period. This parameter is available starting in Release 2. If there are no messages between the user and the NE over the Timeout Period, the session is logged off. A value of **0** disables the timeout function.The initial value is **30** minutes. If the parameter is not specified, it retains its current value. Values: ■ **0**-**999 minutes**.
uidclass	UID Class. This parameter is available starting in Release 2. This is the user class of a ***uid***. Values: ■ **MEMADMIN** The user is a memory administration operations system. If ***uidclass*** is set to **MEMADMIN**, the value of ***screen*** can only be set to **NA**. ■ **OTHER** This is the initial value.
ucpl	Specifies User Community Priority Level. Input commands from users with higher priority are executed before commands from users with lower priority. Values: ■ **1**-**5**. The initial value is **1**.

OUTPUT FORMAT

If the **`ENT-USER-SECU`** request is successful, the network element returns the following normal completion response:

```
   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 the **`RTRV-HDR`** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **`ENT-USER-SECU`** command by the network element:

```
ENT-USER-SECU:LT-WBM-789:kjlee:123456::pass12+,,P3&M3:UCPL=2,
SCREEN=DBCHG&STCHG&PSCHG,TMOUT=360;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there apply to the **`ENT-USER-SECU`** command.

RELATED TL1 MESSAGES

`DLT-USER-SECU`

`ED-USER-SECU`

`RTRV-USER-SECU`

NAME

INH-ALM: Inhibit Alarm

The **INH-ALM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

INH-ALM:*tid*::*ctag*;

DESCRIPTION

The **INH-ALM** command can be initiated by users to inhibit the office audible and visual alarms. The alarms can be enabled via the **ALW-ALM** command. The original state is "office alarm enable."

The **INH-ALM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-100 **INH-ALM** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameters syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for input parameters syntax and description of this parameter.

OUTPUT FORMAT

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

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

If the network element receives an **INH-ALM** command from a user when visual and audible alarms had already been inhibited, the network element provides a normal completion response.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **INH-ALM** command:

```
INH-ALM:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **INH-ALM** command.

RELATED TL1 MESSAGES

ALW-ALM

NAME

`INH-MSG:` Inhibit Message

The **`INH-MSG`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

`INH-MSG-ALL``:`*`tid`*`::`*`ctag`*`;`

DESCRIPTION

The **`INH-MSG`** command instructs the NE to inhibit the forwarding of autonomous messages on the user session. If the user is logged in more than once, only the current login session is affected.

The initial state of the user session is to allow all autonomous messages with which the user login was provisioned. If the **`INH-MSG`** command inhibits autonomous messages that have already been suspended, it will complete successfully.

For Memory Administration users, when autonomous messages are inhibited, the internal atag sequence number will continue to increment for the suppressed autonomous messages.

Forwarding of the inhibited autonomous messages can be resumed with the **`ALW-MSG`** command.

For users that are not in the Memory Administration category, **`REPT EVT SESSION`** messages are not affected by this command; they are always forwarded to the user.

The **`INH-MSG`** command does not generate a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-101 **INH-MSG** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **INH-MSG** 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 the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

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

```
INH-MSG-ALL:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **INH-MSG** command.

RELATED TL1 MESSAGES

ALW-MSG

ED-USER-SECU

RTRV-ATTR-MSG

NAME

INIT-EQPT: Initialize Equipment

The **INIT-EQPT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

DESCRIPTION

The **INIT-EQPT** command can be used to initialize a specific circuit pack or, in some cases, a set of packs. The initialization is equivalent to removing the circuit pack(s) and then reinserting. The command is denied if it would be service affecting.

INPUT PARAMETERS

OUTPUT FORMAT

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following shows an example of the **INIT-EQPT** command where the AID identifies the 7th circuit pack in bay 4, shelf 3:

```
INIT-EQPT:LT-WBM:4-3-#-#-7-cp:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **INIT-EQPT** command.

RELATED TL1 MESSAGES

INIT-SYS

RTRV-NE

NAME

INIT-REG: Initialize Register

The **INIT-REG** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

COMMAND PRIORITY

1.

INPUT FORMAT

INIT-REG-*modifier:tid:aid:ctag:::spec_block;*

DESCRIPTION

The **INIT-REG** command can be initiated to request the network element to initialize all current day and/or all current 15-minute Performance Monitoring (PM) storage registers of a specified type. PM registers for previous day and previous 15-minute time periods are not affected.

The **INIT-REG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-102 **INIT-REG** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the port type or tributary signal type on which the init register command is to act. Values: ■ **ENET** ■ **STM1** ■ **STM4**

Table 3-102 **`INIT-REG`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **STM16** ■ **STM64** ■ **STM1E** ■ **VC3** ■ **VC4** ■ **VC44C**.
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. Values: port/tributary AID (see the AID table in OSEG Appendix A). Range is supported up to the shelf level. The value can also be an ethernet port AID or VCG AID.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
spec_block	See the following table for the *spec_block* parameters.

Table 3-103 **`INIT-REG`** Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
parm	Parameter. This determines the type of PM register that is requested to be initialized. Values: ■ **ALL** (default) ■ **ENET** ■ **RS-MS** ■ **HOVC**.

Table 3-103 **`INIT-REG`** Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
locn	Location for which the PM data is monitored. Values: ■ **NEND** — Near-End PM data only is initialized. ■ **FEND** — Far-End PM data only is initialized. This is not applicable to SONET section layer and DS3 line PM. ■ **ALL** — Both near-end and far-end (if any) PM data are initialized. If the value is omitted, this parameter defaults to **ALL**.
tmper	Time Period. This requests that PM registers for the specified time interval be initialized. This input parameter is required. Values: ■ **15-MIN** — This requests that the current 15-minute PM registers be initialized. ■ **1-DAY** — This requests that the current daily PM registers be initialized. ■ **ALL** — This requests that both the current 15-minute and the current daily PM registers be initialized.

OUTPUT FORMAT

If the **`INIT-REG`** request completes successfully, the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **`RTRV-HDR`** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to the **`INIT-REG`** command as well.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of an **INIT-REG** command by the network element:

```
INIT-REG-T3:LT-WBM:1-1-u-#-16-3:123456:::parm=ds3,tmper=1-day;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **INIT-REG** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response:

- The monitor parameter specified is not valid.
- The location specified is not valid.
- The direction specified is not valid.

- The time period specified is not valid.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following condition will cause an IENE error response:

- The port specified is not provisioned in the system.

The **Equipage, Not EQuipped** error response is shown below:

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

The following condition will cause an ENEQ error response (for a specific product release, some of these conditions might not be applicable):

- The port specified is provisioned in the system but is not equipped.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response (for a specific product release, some of these conditions might not be applicable):

- The PM is disabled by the user.
- The port unit is currently out of service.

The **Status, Working unit FAiled, control hardware failed or missing** error response is shown below:

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

The following condition will cause an SWFA error response (for a specific product release, some of these conditions might not be applicable):

- The system or SRC is currently out of service.

RELATED TL1 MESSAGES

RTRV-PM

NAME

INIT-SYS: Initialize System

The **INIT-SYS** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

INIT-SYS:*tid*::*ctag*;

DESCRIPTION

The **INIT-SYS** command results in the initialization of system controllers or system controller complexes, subrack controllers, and DCC controllers (including the DCCEI) that are in the system. Initialization is equivalent to removing the controllers and reinserting them. During initialization, the database is reloaded from NVM.

The **INIT-SYS** command is denied if it would be service affecting. The **INIT-SYS** command is denied if it would cause the reset of an out-of-service active subrack controller. COMPLD indicates the initialization has been started, not that it has been completed. Any outstanding commands are not executed.

The **INIT-SYS** command resets the board that is addressed by the ***tid***. That is, it resets itself. This is contrasted with the **INIT-EQPT** command which resets a board other than that identified by the ***tid***.

Some INIT-EQPT DBCHG messages could be returned as the system is reset, but there are no requirements as to the order in which they appear.

INPUT PARAMETERS

Table 3-104 **`INIT-SYS`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for input parameters syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element fully complies with the **`INIT-SYS`** request, the following normal completion response is returned to indicate the initialization has been started:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the **`INIT-SYS`** command that initializes the system controllers, subrack controllers, and DCC controllers that are in the system:

```
INIT-SYS:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to **INIT-SYS** command.

RELATED TL1 MESSAGES

INIT-EQPT

RTRV-HDR

NAME

OPR-EXT-CONT: Operate External Control

The **OPR-EXT-CONT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

OPR-EXT-CONT:*tid*:*aid*:*ctag*::[,*dur*];

DESCRIPTION

The **OPR-EXT-CONT** command can be initiated by users to set an external discrete control, such as a relay activation, a fan, a light, or a sprinkler. The control may be specified to remain set (that is continuous) or to be just set for a moment. The **RLS-EXT-CONT** command can be used to clear the miscellaneous discrete.

The **OPR-EXT-CONT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-105 **OPR-EXT-CONT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. The aid identifies the external miscellaneous discrete control which is being set. (See AID table in OSEG Appendix A). Value(s): ■ **MISC_OUT1 … MISC_OUT8**.

Table 3-105 **`OPR-EXT-CONT`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
dur	Duration. This parameter is available starting in Release 3. This parameter sets the duration of the external control operation. Values: ■ **CONTS** Continuous duration ■ **MNTRY** Momentary duration of 300 ms (default value). The default value MNTRY is assumed when this parameter is omitted.

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, i.e., 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`** command **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **`OPR-EXT-CONT`** command.

EXAMPLE INPUT/OUTPUT

The following example shows an **OPR-EXT-CONT** command that sets an external miscellaneous discrete control 3:

```
OPR-EXT-CONT:LT-WBM:MISC_OUT3:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **OPR-EXT-CONT** command.

RELATED TL1 MESSAGES

RLS-EXT-CONT

RTRV-ATTR-CONT

SET-ATTR-CONT

NAME

OPR-LPBK: Operate Loopback

The **OPR-LPBK** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

1.

INPUT FORMAT

OPR-LPBK-*modifier*:*tid*:*aid:ctag*::,,,*lpbktyp*[:*spec_block*];

DESCRIPTION

The **OPR-LPBK** command can be initiated by a user to initiate a loopback on an interface/tributary in the network element.

The ***modifier*** in the **OPR-LPBK** command indicates the rate of the tributary on which the **OPR-LPBK** command is going to act. An **OPR-LPBK** command requesting a cross-connect loopback on a tributary requires a ***modifier***. A facility loopback request operates on a facility interface indicated by the aid; therefore, the ***modifier*** is not required.

Starting in Release 3.0 the modifier is required for facility loopback requests.

The **OPR-LPBK** command can be initiated by a user to request the network element to operate a facility or cross-connect loopback at the specified interface/tributary. The **OPR-LPBK** command will be most commonly used during pre-service testing of facilities and during fault diagnostics.

The loopback request remains active until released (for example, by the TL1 **RLS-LPBK** command or until overridden by a network element reset or initialization).

The **OPR-LPBK** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-106 **OPR-LPBK** Input Parameters

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate or port type on which the operate loopback command is to act. Values: ■ **1GE** Only far-side loopback is supported. ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1) ■ **VC416C** (starting in Release 2) ■ **STM1** ■ **STM4** ■ **STM16** ■ **STM1E**.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. The ***aid*** determines the port or tributary AID for which the loopback is requested. A tributary AID must be provided for a cross-connect loopback and a port AID for a facility loopback. See the AID table in OSEG Appendix A. Values: port or tributary AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
lpbktyp	This parameter indicates the type of loopback to be operated. Values: ■ **CRS** Cross-connect loopback (default) ■ **NSF** Near-side facility loopback for electrical/optical ports. ■ **FSF** Far-side facility loopback for electrical/optical ports.
spec_block	See the following table for the ***spec_block*** input parameters.

Table 3-107 `OPR-LPBK` *spec_block* Input Parameters

Parameter Name	Description
cmdmde	Specifies the command execution mode. If a normal is possible, a force should not be accepted. Values: ■ **NORM** (default) ■ **FRCD**.

OUTPUT FORMAT

After receiving the **`OPR-LPBK`** command, the following normal completion response is returned if there is no failure condition to report:

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

If the requested loopback command does not alter the existing loopback condition, the network element shall deny the command.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of an **OPR-LPBK** command requesting a VC3 cross-connect loopback with forced command execution mode:

```
OPR-LPBK-VC3:LT-WBM-789:1-1-#-#-4-1-1:123456::,,,CRS:CMDMDE=FRCD;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **OPR-LPBK** command.

RELATED TL1 MESSAGES

RLS-LPBK

RTRV-LPBK

NAME

OPR-PROTNSW: Operate Protection Switch

The **OPR-PROTNSW** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

OPR-PROTNSW:*tid*:[*aid*]:*ctag*::*protype*,[*rid*]:*spec_block*;

Starting in Release 2.1, **OPR-PROTNSW** has the following input format:

OPR-PROTNSW:*tid*:[*aid*]:*ctag*::*protype*,[*rid*],[*ppgname*]:
spec_block;

DESCRIPTION

The **OPR-PROTNSW** command instructs the network element to initiate a protection switch request on a protection group. See **ENT-PROTN-GRP** for a description of protection groups.

The **OPR-PROTNSW** command may generate a **REPT SW** or a **REPT EVT** message.

A set of path protection groups can be identified by a path protection group name (***ppgname***). The name can be assigned when the path protection group is established via the **ENT-CRS** command and it can be modified by the **ED-PROTN-GRP** command.

Groups drawing their inputs from the same pair of ports should typically all be assigned the same name. For consistent operations among path protection groups with the same name, the working input tributaries should all be in the same port, and the protection input tributaries should all be in the same port. Groups with the same input ports but different output ports may have different names when desirable.

The **`OPR-PROTNSW`** command can operate on a set of path protection groups as identified by their *ppgname*. If an input tributary AID (***aid***) is specified in addition to the ***ppgname***, then the command operates on the subset of protection groups that share both of these parameters.

Specifying the destination parameter (***dest)*** as WKG (PROTN) will cause all members of the ***aid, ppgname*** set to switch to working (protection).

Alternatively, the destination AID parameter (***destaid***) could be specified to cause all members to switch to that AID. If a value is specified for ***destaid***, then all members of the ***aid, ppgname*** set must have ***destaid*** as one of their two inputs; else, the command will be DENY'd.

For PATHDRI, the protection switch applies to all constituents of the identified tributary. For this case, the following table summarizes the use of path protection group names as related to **`OPR-PROTNSW`**.

Table 3-108 ***ppgname*** and destination usage for PATHDRI

protection grp type	**command target id**		**destination**		**comment**
	aid	**path protection group name**	***dest*** (note 2)	***destaid*** (note 2)	
PATHDRI	not used	***ppgname***	WKG or PROTN	grp member (input) logical tributary AID	operation applies to all tributaries that are group members of the ***ppgname*** (note 1)
PATHDRI	grp member (input) logical tributary AID	***ppgname***	WKG or PROTN	grp member (input) logical tributary AID	operation applies to all tributaries that are group members of the ***aid***, ***ppgname*** subset (note 1, note 3)
PATHDRI	path prot grp id (output logical tributary AID)	not used	WKG or PROTN	grp member (input) logical tributary AID	normal, non-aliasing target identification (note 1, note 3, note 4)

Note 1: Group members are defined to be the working and protection input logical tributaries of the path protection group.
Note 2: Only ***dest*** or ***destaid*** need to be specified.
Note 3: ***aid*** and ***destaid*** do not necessarily need to be the same. ***aid*** only identifies the target protection group subset. ***destaid*** identifies the member to be made active. For each protection group, ***destaid*** must be a group member or else the command will be DENY'd.
Note 4: The output logical tributary aid of an adjunct path-protected cross connection is not a path prot grp id, only the output of a path-protected cross connection is.

For 1xN electrical interface protection switching, all working electrical interface packs on a single shelf shall be protected by the protection units. It is not possible for the user to provision certain working electrical interface packs to be unprotected in normal 1xN operation.

The lockout of working circuit pack external request provides a function similar to allowing working electrical interface packs to be unprotected.

Lockout can be directed to a single working (that is, non-protection) electrical interface.

The lockout of working circuit pack external request prevents access to the protection electrical interface and causes a protection to working switch for that specific circuit pack if its traffic is currently on protection. The Lockout of Working command frees up the Protection pack if the traffic from the specified Working pack is currently carried on the Protection pack.

A Clear command will preempt the Lockout of working command.

For Protection Switch priority rules, in the case of a Lockout command directed towards a specified circuit pack, if an equal priority condition currently exists for the specified circuit pack (that is, that circuit pack is currently locked out), the new request is denied; otherwise, it is accepted. (This is true for both Lockout of Working and Lockout of Protection commands.)

One example is, following Lockout of Working (pack 1), a subsequent command Lockout of Working (pack 2) is accepted, resulting in both packs 1 and 2 being locked out.

Another example is, following Lockout of Working (pack 1), another Lockout of Working (pack 1) is rejected, resulting in pack 1 continuing to be locked out.

The **`OPR-PROTNSW`** command does not generate a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-109 **`OPR-PROTNSW`** Input Parameters (Sheet 1 of 3)

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. If ***rid*** is specified, then ***aid*** can be omitted.

Table 3-109 **`OPR-PROTNSW`** Input Parameters (Sheet 2 of 3)

Parameter Name	Description
	If ***ppgname*** is specified, then ***aid*** can be omitted for a PATHDRI protection type. For each protection group type, ***aid*** can be a **protection group AID.** See ***protype*** for a list of the protection group types. For some protection groups, ***aid*** is not constrained to be a protection group AID. In this case, the protection group associated with the AID will be accessed. **Non protection group AIDs can be specified for the following types:** ■ **1+1**: port AID (starting in Release 1) ■ **2F**: port AID (starting in Release 1) ■ **1xNOPT**: port AID (starting in Release 3) ■ **EQPTTMG**: circuit pack AID ■ **EQPTSWFBR**: circuit pack AID ■ **PATHDRI:** input tributary AID (starting in Release 2.1). This option is only allowed if ***ppgname*** is specified (see the **DESCRIPTION** section for more information).
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ppgname	Path Protection Group Name (Starting in Release 2.1). ***rid*** and ***ppgname*** cannot be used simultaneously in the same command execution because the ***protypes*** are different. Specifying this parameter can cause **`OPR-PROTNSW`** to operate on more than one protection group. See the **DESCRIPTION** section for more information. Storage and retrieval of the ***ppgname*** is case sensitive, but actual use of the ***ppgname*** to determine the corresponding protection group is case insensitive. It is an ASCII string of up to 24 characters from the TID character set. This parameter can only be specified for path protection groups. If specified for other than path protection groups, then the command will be DENY'd with IDNV. If input values are specified for ***aid*** and ***ppgname***, then the command will be DENY'd with IDNV if there is no protection group described by ***aid***, ***ppgname***. For a CONSTITUENTPATH protection type, if a value is specified for ***ppgname***, then an input tributary AID value must also be specified for ***aid***.

Table 3-109 **`OPR-PROTNSW`** Input Parameters (Sheet 3 of 3)

Parameter Name	Description
protype	Protection Type. Values: ■ **1+1** (starting in Release 1) ■ **2F** (starting in Release 1) ■ **1xNOPT** (starting in Release 3) ■ **PATHDRI** (starting in Release 1) All constituents of the protection group will be switched. ■ **1xNELEC** ■ **EQPTTMG** ■ **EQPTSWFBR** Switch fabric protection. This protection type refers to the switch packs. ■ **2F** (starting in Release 1) Starting in Release 3.0, the value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
spec_block	See the following "**`OPR-PROTNSW`** ***spec_block*** Parameters" table.

Table 3-110 **`OPR-PROTNSW`** ***spec_block*** Parameters (Sheet 1 of 4)

Parameter	Description/PROTYPE	Value
sc	Switch Command. This is a required parameter. For protection switch commands with priority equal to or below the priority of the current switch request state for that protection switch group, the command will be denied. The command's priority order, from highest to lowest is: lockout, forced, manual. A forced or manual switch command that results in no change to the switch request state or the active unit stated will be denied. This parameter is applicable to the following ***protypes***:	

Table 3-110 `OPR-PROTNSW` ***spec_block*** Parameters (Sheet 2 of 4)

Parameter	Description/PROTYPE	Value
	■ **1+1** (starting in Release 1)	**LOCKOUT**, **FRCD**, **MAN**
	■ **1+1** (*protocol*: 1+1_OPTM)	**LOCKOUT**, **FRCD**
	■ **2F** (starting in Release 1)	**LOCKOUT**, **FRCD**, **MAN**
	■ **1xNOPT** (starting in Release 3)	**LOCKOUT**, **FRCD**, **MAN**
	■ **PATHDRI** (starting in Release 1)	**LOCKOUT**, **FRCD**, **MAN**
	■ **1xNELEC**	**LOCKOUT**, **FRCD**, **MAN**
	■ **EQPTSWFBR** or **EQPTIOFBR**	**FRCD**, **MAN**
	Starting with Release 2.0, **FRCD** no longer applies for **EQPTTMG**.	
dest	Destination. If neither ***dest*** nor ***destaid*** is specified, then the **`OPR-PROTNSW`** command does nothing (except for **2F** and **4F** where an empty field for ***dest*** can imply **WRK**). For protection group types **1xNOPT**, **2F**, and **4F,** ***dest*** identifies the entity to be operated on. For example, for a protection type of 4F, the destination of a manual switch command specifies the entity that should be manually switched to protection. For protection group types **1+1**, **EQPTTMG**, **EQPTSWFBR**, **EQPTIOFBR**, **EQPTCTL**, **PATHDRI**, ***dest*** specifies the entity that should be active after the switch operates.	
	This parameter is applicable to the following ***protypes***:	
	■ **1+1** (starting in Release 1)	**WKG**, **PROTN**
	For ***sc***=LOCKOUT, ***dest*** must be PROTN.	
	■ **2F** (starting in Release 1)	**WKG**, **PROTN**
	■ **1xNOPT** (starting in Release 3)	**1-n**, **PROTN**
	For ***sc***=LOCKOUT, ***dest*** must be PROTN. For ***sc***=MAN or FRCD, ***dest*** must be 1-n.	

Table 3-110 **`OPR-PROTNSW`** ***spec_block*** Parameters (Sheet 3 of 4)

Parameter	Description/PROTYPE	Value
	■ **PATHDRI** (starting in Release 1)	**WKG**, **PROTN**
	For ***sc***=LOCKOUT, ***dest*** must be PROTN.	
	■ **EQPTTMG**	**0**, **1**
	■ **EQPTSWFBR**	**0**, **1**
destaid	Destination Entity AID. If neither ***dest*** nor ***destaid*** is specified, then the **`OPR-PROTNSW`** command does nothing. If ***dest*** and ***destaid*** are inconsistent, then the command will be denied. For protection group types **1xNELEC, 1xNOPT**, **2F**, and **4F, *destaid*** identifies the entity to be operated on. For example, for a protection type of 4F, the destination of a manual switch command specifies the entity that should be manually switched to protection. For protection group types **1+1**, **EQPTTMG**, **EQPTSWFBR**, **EQPTIOFBR**, **EQPTCTL**, and **PATHDRI**, ***destaid*** specifies the entity that should be active after the switch operates.	
	This parameter is applicable to the following ***protypes***:	
	■ **1+1** (starting in Release 1)	port AID
	■ **2F** (starting in Release 1)	port AID
	■ **1xNOPT** (starting in Release 3)	port AID
	■ **PATHDRI** (starting in Release 1).	logical tributary AID
	Starting in Release 2.1, if a value is specified for ***ppgname*** and none for ***aid***, then the entire set of path protection groups identified by ***ppgname*** switches to the input designated via ***destaid*** (if the AID exists).	port AID
	Starting in Release 2.1, if a value is specified for ***ppgname*** and also ***aid***, then the operation applies to the specific constituent groups identified by the (input) group member AIDs. This parameter is applicable to the following ***protypes***:	
	■ **1xNELEC**	circuit pack AID
	■ **EQPTTMG**	circuit pack AID

Table 3-110 **`OPR-PROTNSW`** ***spec_block*** Parameters (Sheet 4 of 4)

Parameter	Description/PROTYPE	Value
	■ **EQPTSWFBR**	circuit pack AID
destside	Destination. If a value is specified for ***dest***, then ***destside*** is required for the following ***protypes***; otherwise, it is not allowed: ■ **2F** (starting in Release 1)	 **EAST**, **WEST**
swtype	Switch Type. For ring protection switching, a loopback mechanism is used such that the service route is looped back onto the protection route in the direction opposite the failure. For span protection switching, all traffic being carried on the service span between an adjacent pair of nodes is switched to the protection span, between the same pair of nodes and on the same side of the ring. This parameter is required for the following ***protypes***; otherwise, it is not allowed: ■ **2F** (starting in Release 1)	 **SPAN**, **RING**

To help give more insight into the protection switching of rings, the following table shows the allowable ***sc***, ***dest***, ***swtype*** values for two and four fiber **`OPR-PROTNSW`** commands.

Table 3-111 Protection Switching Parameters for Rings (Sheet 1 of 2)

Case	*sc*	*dest*	*swtype*	Description
LS-R	**LOCKOUT**	**WRK**	**RING**	Prevents any ring switch for the addressed span.
LS-S	**LOCKOUT**	**WRK**	**SPAN**	Prevents any span switch for the addressed span (4F only).
LP-A	**LOCKOUT**	**PROTN**	**ALLSPANS**	Prevents both span and ring switching on the entire ring.
LP-S	**LOCKOUT**	**PROTN**	**SPAN**	Prevents any ring switches in the entire ring, and any span switches for the addressed span.
FS-R	**FRCD**		**RING**	Causes a ring switch on the addressed span, unless the protection route is satisfying a higher priority request or is failed.

Table 3-111 Protection Switching Parameters for Rings (Sheet 2 of 2)

Case	*sc*	*dest*	*swtype*	Description
FS-S	**FRCD**		**SPAN**	Causes a span switch on the addressed span, unless the protection route is satisfying a higher priority request or is failed (4F only).
MS-R	**MAN**		**RING**	Causes a ring switch for the addressed span, if the protection route is defect free and is not satisfying an equal or higher priority request.
MS-S	**MAN**		**SPAN**	Causes a span switch for the addressed span, if the protection route is defect free and is not satisfying an equal or higher priority request (4F only).
EXER-R	**EXERCISER**		**RING**	Tests the signaling required to complete a ring switch.
EXER-S	**EXERCISER**		**SPAN**	Tests the signaling required to complete a span switch.

Notes:

1. The table does not detail all of the ***spec_block*** parameters. For example, ***destside*** must be set to **EAST** or **WEST** (except for a lockout of all spans).
2. ***Destaid*** can be assigned a value instead of ***dest***.
3. The entries for **EXERCISER** are shown for completeness even though that value of ***sc*** may not be allowed in initial releases.

OUTPUT FORMAT

If the **`OPR-PROTNSW`** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

The output parameters in the normal completion response are specified in the **OUTPUT PARAMETERS** command section of the **`RTRV-HDR`** command.

EXAMPLE OUTPUT

The following example shows the successful completion of an **OPR-PROTNSW** command by the network element:

```
OPR-PROTNSW:LT-WBM:1-1-o11:123456::1+1:sc=man,dest=protn;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **OPR-PROTNSW** command.

RELATED TL1 MESSAGES

DLT-CRS

ENT-CRS

RLS-PROTNSW

NAME

`OPR-RST-LASER:` Operate Restore Laser

The **`OPR-RST-LASER`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

`OPR-RST-LASER``:`*`tid`*`:`*`aid`*`:`*`ctag`*`::`*`mrstper`*`;`

DESCRIPTION

The **`OPR-RST-LASER`** command restarts the laser on a port after an automatic laser shutdown.

The **ED-rr** command allows control settings over the laser by the parameters ***als*** and ***laser***.

The **`OPR-RST-LASER`** command generates a **`REPT DBCHG`** message.

INPUT PARAMETERS

OUTPUT FORMAT

If the **`OPR-RST-LASER`** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE OUTPUT

This is an example of a manual laser restart:

```
OPR-RST-LASER:LT-WBM:1-1-t04-e-08-1:123456::2;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **OPR-RST-LASER** command.

RELATED TL1 MESSAGES

None.

NAME

OPR-SYNCNSW: Operate Synchronization Switch

The **OPR-SYNCNSW** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

OPR-SYNCNSW-*modifier*:*tid*::*ctag*::*sc*[,*dest*];

DESCRIPTION

The **OPR-SYNCNSW** command can be initiated by user to request the network element to operate manual or forced synchronization reference protection switch, to lock out synchronization reference switching, or to request a change from the provisioned synchronization mode to forced holdover state.

The **OPR-SYNCNSW** command generates **REPT EVT** or **REPT ALM** messages.

INPUT PARAMETERS

Table 3-112 **`OPR-SYNCNSW`** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Values: ■ **REF** — Specifies the system assigned timing reference switch ■ **MOD** — Specifies the system clock mode switch. Starting with Release 3.0, this parameter can also have the following value: ■ **OUTREF** — Specifies the external timing output switch.
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
sc	Switch Command. This defines the type of switch action that is initiated on the timing reference or mode. Values: ■ **LOCKOUT** — This applies to the **REF** modifier only. The reference which is addressed by the destination parameter will be locked out by the user and cannot be used as a timing reference signal until the lockout is cleared. Starting with Release 3.0, this value is also applicable for the **OUTREF** modifier. ■ **CLRWTR** — This applies to the **REF** modifier only. The wait to restore period of the reference which is addressed by the destination parameter will be terminated. The signal status will return to normal. ■ **FRCD** — Forced switch. This is applicable to all modifiers. For the **REF** modifier, it forces selection of the specified reference determined by the destination parameter. For the **MOD** modifier, it forces system timing from the locked mode to the holdover mode.

Table 3-112 **`OPR-SYNCNSW`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	Starting with Release 3.0, this value is also applicable for the **OUTREF** modifier. It forces selection of the specified reference determined by the destination parameter. ■ **MAN** — Manual switch. This applies to the **REF** modifier only. This causes a switch to the specified reference determined by the destination parameter. Starting with Release 3.0, this value is also applicable for the **OUTREF** modifier. This causes a switch to the specified reference determined by the destination parameter. **LOCKOUT** has the highest priority, followed by **FRCD**, then **MAN**.
dest	Assigned timing reference identifier: destination. This is the list of timing references available to the system clock. This parameter is valid and required for the **REF** modifier only. Values: ■ **EXTREF1** ■ **EXTREF2**. Starting with Release 3.0, this parameter is also valid and required for the **OUTREF** modifier. Starting with Release 1, this parameter can also have value: ■ **LINE1**. Starting with Release 2.1, this parameter can also have value: ■ **LINE2**. Starting with Release 3, this parameter can also have values: ■ **LINE3** ■ **LINE4** ■ **LINE5** ■ **LINE6**.

The following table defines which values of the ***dest*** parameter are applicable for each ***modifier*** value:

Table 3-113 Values of ***dest*** related to ***modifier***

modifier	allowed values of ***dest***							
	EXTREF1	**EXTREF2**	**LINE1**	**LINE2**	**LINE3**	**LINE4**	**LINE5**	**LINE6**
REF	X	X	X	X	X	X	X	X
MOD	-	-	-	-	-	-	-	-
OUTREF	-	-	X	X	X	X	X	X

OUTPUT FORMAT

If the **OPR-SYNCNSW** request completes successfully, the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **OPR-SYNCNSW** command:

```
OPR-SYNCNSW-REF:LT-WBM::123456::lockout,extref1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **OPR-SYNCNSW** command as well.

RELATED TL1 MESSAGES

RLS-SYNCNSW

RTRV-SYNCN

SET-SYNCN

NAME

REPT ALM ENV: Report Alarm Environment

The **REPT ALM ENV** autonomous message is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

DESCRIPTION

The **REPT ALM ENV** autonomous messages report when environmental alarm of level CR, MJ, or MN either sets or clears.

General Discussion of Alarms

See **RTRV-ALM** for a general discussion of alarms.

If an environmental condition has an alarm level of critical, major, or minor, then the occurrence of that condition will be reported in an **REPT ALM ENV** message.

An alarm profile can be assigned by **SET-ATTR-ENV**. The profile's alarm level can be set via **ED-ASAP-PROF**. If an alarm level has not been assigned, then the alarm has a default value of NA (not alarmed).

RTRV-ALM-ENV is an on-demand version of the autonomous **REPT ALM ENV**.

An environmental alarm of level No Alarm will be reported by **REPT EVT**.

An alarm reported to the OS via the **REPT ALM ENV** message has a corresponding **REPT ALM ENV** clearance message that is generated when the alarm condition clears.

OUTPUT FORMAT

The general format of a **REPT ALM ENV** message is as follows:

```
   sid date time
almcde atag REPT ALM ENV
  "aid:ntfcncde,almtype,ocrdat,ocrtm[,\"almmsg\"]"
   (1 or more lines of the above)
;
```

OUTPUT PARAMETERS

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

Table 3-114 **`REPT ALM ENV`** Output Parameters

Parameter Name	Description
almcde	Alarm Code. Values: ■ *C - Critical alarm ■ ** - Major alarm ■ * - Minor alarm ■ A - Automatic message (nonalarm). This is used only to report a cleared alarm.
atag	Automatic Tag. The atag 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.
aid	Access Identifier. This is the address for which an alarm is being reported. (See the AID table in OSEG Appendix A.) Values: Input miscellaneous discrete AID.
almtype	Alarm Type. This is a parameter that identifies the type of alarm indication being reported. The only allowable value is MISC.
ntfcncde	Notification Code. This is the alarm level. Values: ■ CR - Critical alarm ■ MJ - Major alarm ■ MN - Minor alarm ■ CL - Cleared alarm.
ocrdat	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
ocrtm	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
almmsg	A string describing the environmental point. Value: An alphanumeric string, upper and lower case, spaces and periods allowed, up to 26 characters.

EXAMPLE OUTPUT

The first example shows a **REPT ALM ENV** autonomous message that was generated because a door was opened:

```
   LT-WBM 01-08-15 08:00:00
*  5 REPT ALM ENV
   "misc_in7:MN,MISC,01-01,07-49-23,\"open door\""
;
```

The next example shows a **REPT ALM ENV** autonomous message that was generated when the door was closed:

```
   LT-WBM 01-08-15 08:05:20
A  7 REPT ALM ENV
   "misc_in7:CL,MISC,01-01,08-05-12,\"open door-cleared\""
;
```

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT ALM

REPT COND

REPT EVT

REPT SW

RTRV-ALM

RTRV-ALM-ENV

RTRV-COND

RTRV-HDR

SET-ATTR-ENV

NAME

`REPT ALM:` Report Alarm

The **`REPT ALM`** autonomous message is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

DESCRIPTION

`REPT ALM` messages are generated autonomously by the network element to report an alarm that requires immediate attention by the craft at the OS. Each alarm message has an alarm severity associated with it.

General Discussion of Alarms

See **`RTRV-ALM`** for a general discussion of Alarms.

If an alarm has an alarm level of critical, major, or minor, then its occurrence will be reported in a **`REPT ALM`** message.

An alarm level can be assigned by **`ED-ASAP-PROF`**. If an alarm level has not been assigned, then it has a default alarm level, which is a function of the type of profile.

An exception to this rule is an environmental alarm which is reported by a **`REPT ALM ENV`** autonomous message.

An alarm reported to the OS via the **`REPT ALM`** message has a corresponding **`REPT ALM`** clearance message that is generated when the alarm clears.

OUTPUT FORMAT

The general format of a **`REPT ALM`** message is as follows:

```
   sid date time
almcde atag REPT ALM modifier
  "aid:ntfcncde,condtype,srveff,ocrdat,ocrtm,,,,[thlev]:\"conddescr\""
   (1 or more lines of the above)
;
```

OUTPUT PARAMETERS

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

Table 3-115. `REPT ALM` Output Parameters (Sheet 1 of 3)

Parameter Name	Description
almcde	Alarm Code. This parameter has one of the following values: ■ *C - Critical alarm ■ ** - Major alarm ■ * - Minor alarm ■ A - Automatic message (nonalarm). This is used only to report a cleared alarm.
atag	Automatic Tag. The *atag* 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.
modifier	This parameter is a message modifier to the output. It has one of the following values: ■ COM — Common. An event that applies to the whole network element system, for example, a processing error. ■ EQPT — An equipment-related event ■ 1GE — An event at the 1 gigabit ethernet level (Starting in Release 3). ■ VCG — An event on a virtual concatenated group (Starting in Release 3) ■ E1 — A timing reference event at the E-1 level (starting in Release 1) ■ STM1 — A facility-related event for synchronous transport mode 1 (starting in Release 1) ■ STM1E — A facility-related event for synchronous transport mode 1, electrical (starting in Release 1) ■ STM4 — A facility-related event for synchronous transport mode 4 (starting in Release 2) ■ STM16 — A facility-related event for synchronous transport mode 16 (starting in Release 1) ■ STM64 — A facility-related event for synchronous transport mode 64 (starting in Release 1) ■ VC3 — A facility-related event for virtual container 3 (starting in Release 1)

Table 3-115. `REPT ALM` Output Parameters (Sheet 2 of 3)

Parameter Name	Description
	■ VC4 — A facility-related event for virtual container 4 (starting in Release 1) ■ VC44C — A facility-related event for a concatenated VC signal (starting in Release 1) ■ VC416C — A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 2).
aid	Access Identifier. This is the address of the equipment component or facility, as identified by the *modifier*, for which an alarm is being reported. See the AID table in OSEG Appendix A.
ntfcncde	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.
condtype	Condition Type. This parameter identifies the type of alarm indication being reported. See OSEG Appendix A for details.
srveff	Service Effect. This indicates the effect of the reported alarm on service and has one of the following values: ■ SA - Service-affecting condition ■ NSA - Nonservice-affecting condition. A message reporting the clearing of an alarm has the same *srveff* value as the one reporting the alarm.
ocrdat	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
ocrtm	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
thlev	Threshold Level (starting in Release 2.1). Only valid for a *condtype* of T-BERL. Values: ■ 6 - implies “Bit Error Rate”; that is, Signal Degrade ■ 3 - implies “Excessive Bit Error Rate”; that is, Signal Fail.

Table 3-115. `REPT ALM` Output Parameters (Sheet 3 of 3)

Parameter Name	Description
conddescr	Description of the Condition. The general format is: category, entity, description, additional text. If there is no additional text, then the trailing comma may be omitted. See OSEG Appendix A for details. Example: Communications, OC3 port, Loss Of Signal.

EXAMPLE OUTPUT

The following autonomous message reports an alarm for bay 1, shelf 1, slot 3, port 1. The alarm is a Loss of Signal, and the modifier indicates that the type of signal is STM16. The notification code (alarm level) is critical and it is service affecting.

```
   LT-WBM 98-01-01 08:00:00
*C 126 REPT ALM STM16
   "1-1-u-#-03-1:CR,LOS,SA,01-01,07-29-13:\"Communications, STM
16 port, STM Loss Of Signal\""
;
```

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT EVT

REPT SW

RTRV-ALM

RTRV-ALM-ENV

RTRV-COND

RTRV-HDR

SET-SYNCN

NAME

REPT DBCHG: Report Database Change

The **REPT DBCHG** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

DESCRIPTION

The **REPT DBCHG** message reports any change in the system database. Changes can be caused by a TL1 user, a CMISE user, or by an internally-generated state change.

Changes in user provisionable attributes are reported as the equivalent TL1 command that would cause that change. Changes in non-user provisionable attributes are reported using only the AID and the BLOCK parameters.

Any time a command is entered that causes a system reset, a **REPT DBCHG** message is transmitted before the system resets.

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.

If a database change occurs as a result of a TL1 command in which an AID range is entered, the system will output separate **REPT DBCHG** messages for each affected AID.

If the database change occurs as a result of a TL1 command, a **REPT DBCHG** message will be transmitted to users provisioned to receive **REPT DBCHG** messages, including the user which issued the command. Therefore, a memory management OS must expect to receive database change messages for changes it caused.

OUTPUT FORMAT

The following output message is returned:

```
   sid date time
A  atag REPT DBCHG
   "TIME=chgtm,DATE=chgdat:ccb:[aid]:[com_block]:[spec_block]:[pst]
[,sst]"
     ...
;
```

The output is formatted to look like the fields of a TL1 command, but it is not necessarily a command that can be input back to the system. For example, the *ccb* field could say RESET to signify a system reset, but RESET is not a valid TL1 command.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **REPT DBCHG**. Additional parameters that specifically apply to this **REPT DBCHG** response are defined as follows:

Table 3-116 **REPT DBCHG** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
atag	Automatic Tag. This is used for message sequencing. The number is incremented by one for each autonomous message, and the messages are transmitted to the user in that same order. Values: 000 through 999.
chgtm	Time When The Change Occurred. Value: HH-MM-SS.
chgdat	Date When The Change Occurred. Value: YY-MM-DD.
ccb	Command Code Block. Value: verb-modifier[-modifier].
aid	Access Identifier(s). One or more AIDs, separated by a comma. See the AID table in OSEG Appendix A. The *aid* block can also contain a 'uid' parameter; for example, the report a change made with **ENT-USER-SECU**. The *aid* can also be reported using && ranging; for example, 1-1-#-#-01-1-1&&-192.
com_block	Common Block. This is a position-defined field. If the database change is the result of a TL1 command which contains parameters in this block, the parameter values are included in this block in the same order as the corresponding TL1 command.

Table 3-116 **REPT DBCHG** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	Specific Block. This is a name-defined field. If the database change is the result of a TL1 command which contains parameters in this block, the parameter names and values are included in this block. Parameters within the specific block are positionally independent and are specified using a name-defined construct of: PARAMETER=value in a comma-separated list. The parameter names are the same as those for the corresponding TL1 command.
pst	Primary State. Values: Same as those in the command which is being reported.
sst	Secondary State. Values: Same as those in the command which is being reported.

EXAMPLE OUTPUT

The following is an example of the **REPT DBCHG** command:

```
   LT-WBM 01-08-15 08:00:00
A  001 REPT DBCHG
   "TIME=07-59-59,DATE=01-08-15:ED-EQPT:1-1::ONCPI=2:"
;
```

RELATED TL1 MESSAGES

INIT-SYS

NAME

REPT EVT SESSION: Report Event Session

The **REPT EVT SESSION** autonomous message is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.1

DESCRIPTION

REPT EVT SESSION messages are transmitted to a user to indicate a non-alarmed event related to their session.

REPT EVT SESSION messages will not appear in any notification logs. Also, they are not filtered by the user's ***screen*** parameter, and they are not blocked by **INH-MSG**.

REPT EVT SESSION messages are not sent to MEMADMIN users, since it would throw off the ATAG numbering, which is needed for **RTRV-AO** to be able to retrieve from the log.

OUTPUT FORMAT

The general format of a **REPT EVT SESSION** message is as follows:

```
   sid date time
A  atag REPT EVT SESSION
   "::spec_block"
;
```

Starting in Release 3.0, when a user is logged out by a System Administrator, the user receives the following notification:

```
   sid date time
A  atag REPT EVT SESSION
   /* Your session has been terminated by the System Administrator.
      Please contact the System Administrator for additional information.
   */
;
```

OUTPUT PARAMETERS

Table 3-117 `REPT EVT SESSION` Output Parameters

Parameter Name	Description
spec_block	*sysavst* System Availability Status. This parameter is available starting in Release 2.1. This parameter reports the initialization status of the system. Values: ■ AVAILABLE System has completed initializing and is ready. ■ INITIALIZING System is not available because it is still initializing. ■ FAILEDUNEQ System controller has failed or is unequipped.

EXAMPLE OUTPUT

The following is an example:

```
   TID01 00-01-14 10:59:27
A  001 REPT EVT SESSION
   "::sysavst=AVAILABLE"
;
```

RELATED TL1 MESSAGES

`REPT EVT`

NAME

REPT EVT: Report Event

The **REPT EVT** autonomous message is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

DESCRIPTION

REPT EVT messages are generated autonomously to report alarms of level not alarmed.

General Discussion of Alarms

See the **RTRV-ALM** command for a general discussion of alarms.

If an alarm is provisioned as Not Alarmed (NA), then the occurrence of that alarm is reported in a **REPT EVT** message. **REPT EVT** messages also occur when any such standing alarms clear and are used to report transient conditions.

A standing condition is an alarm event that has a beginning and an end. When the event begins, the standing condition is declared via an autonomous message. When the event ends, an autonomous message is sent to indicate that the event cleared.

A transient condition only results in one autonomous message - a declaration that a specific transient condition occurred.

Alarm levels can be assigned by **ED-ASAP-PROF**. If an alarm level has not been assigned, then the alarm has a default alarm level which is a function of the type of profile.

Protection switching messages are provided to the OS using the **REPT EVT** message.

By definition, a protection switching event occurs when the service switches from working to protection or vice versa. **REPT EVT** does not report switching events that are reported by **REPT SW** which reports equipment protection switches of a duplex equipment unit pair.

REPT EVT does not report any autonomous messages that are reported by other **REPT** commands.

As an example, **REPT DBCHG** autonomous messages report when provisioning changes are made. **REPT EVT** does not report them.

This exclusion does not pertain to NA alarms reported via **REPT COND** which provides a summary of the NA alarms that are still set.

Starting in Release 3, **REPT EVT** messages will be issued for 1+1 equipment protection switch state changes that result in a change of active units (this is in addition to the current **REPT EVT** messages for a state change of inactive units). This implies a 1+1 equipment protection switch may cause both a **REPT EVT** and a **REPT SW** autonomous message.

OUTPUT FORMAT

The general format of a **REPT EVT** autonomous message is as follows:

```
   sid date time
A  atag REPT EVT modifier
   "aid:condtype,condeff,ocrdat,ocrtm,,,[monval],[thlev][,tmper]
[:\"conddescr\"]"
   (1 or more lines of the above)
;
```

Since trailing commas to the left of a colon can be deleted, for non-TCA events, the output format is as follows:

```
   "aid:condtype,condeff,ocrdat,ocrtm[:\"conddescr\"]".
```

OUTPUT PARAMETERS

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

Table 3-118 **REPT EVT** Output Parameters (Sheet 1 of 5)

Parameter Name	Description
atag	Automatic Tag. The *atag* 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.
modifier	This parameter is a message modifier to the output. It has one of the following values:

Table 3-118 **REPT EVT** Output Parameters (Sheet 2 of 5)

Parameter Name	Description
	■ COM — Common. An event that applies to the whole network element system, for example, a processing error. ■ EQPT — An equipment-related event ■ E1 — A timing reference event at the E-1 level (starting in Release 1) ■ STM1 — A facility-related event for synchronous transport mode 1 (starting in Release 1) ■ STM1E — A facility-related event for synchronous transport mode 1, electrical (starting in Release 1) ■ STM4 — A facility-related event for synchronous transport mode 4 (starting in Release 2) ■ STM16 — A facility-related event for synchronous transport mode 16 (starting in Release 1) ■ STM64 — A facility-related event for synchronous transport mode 64 (starting in Release 1) ■ VC3 — A facility-related event for virtual container 3 (starting in Release 1) ■ VC4 — A facility-related event for virtual container 4 (starting in Release 1) ■ VC44C — A facility-related event for a concatenated VC signal (starting in Release 1) ■ VC416C — A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 2).
aid	Access Identifier. See the AID table in OSEG Appendix A for details about a specific AID. For a nonprotection switching event, *aid* is the address of the equipment component or facility, as identified by the *modifier*, for which an alarm is being reported. For a protection switching event, *aid* is either the address of the currently active unit or of the previously active unit. Which one is used is a function of the type of switch and also the protection group type.

Table 3-118 REPT EVT Output Parameters (Sheet 3 of 5)

Parameter Name	Description
	For either lockout or the clearing of a lockout, the AID of the locked out entity is used. This rule is independent of the protection group type. For the following protection group types (if they exist in the product) 1+1 Optical revertive, 1xNOPT, 2F, and 4F, the AID selection is defined as follows: if the protection unit is active, the AID of the previously active unit is reported. If protection unit is not active, the AID of the currently active unit is reported. There are 4 cases to consider: ■ W(orking) -> P(rotection) ■ P -> W ■ W -> W ■ P -> P. Using *protn* and *wkg* to represent the working and protection AIDs, the AIDs for these 4 cases are: ■ *wrk* ■ *wrk* ■ *wrk* ■ *protn*. For 1+1 Optical nonrevertive, the AID of the previously active unit is reported. For the 4 cases: ■ W -> P ■ P -> W ■ W -> W ■ P -> P. The corresponding AIDs are: ■ *wrk* ■ *protn* ■ *wrk* ■ *protn*. For the 1xNELEC protection group type, the AID of the working circuit pack is used for all four cases (W -> W, P -> W, W -> W, P -> P.) For the case P -> P, the working pack of interest is the one that is currently protected. For 1+1 equipment protection switching groups (for example, EQPTTMG), the AID of the protection group is reported.

Table 3-118 **REPT EVT** Output Parameters (Sheet 4 of 5)

Parameter Name	Description
	For path protection groups (PATHDRI, CONSTITUENTPATH, etc.), the AID of the protection group is reported. For the timing reference protection group type, the AID of the currently active timing reference is used. For a clock mode protection switch, SYSTEM is used as the AID.
condeff	Condition Effect. This indicates the effect of the reported event on the network element and has one of the following values: ■ CL - Standing condition cleared ■ SC - Standing condition ■ TC - Transient condition (default).
conddescr	Description Of The Condition. The general format is: category, entity, description, additional text. If there is no additional text, then the trailing comma may be omitted. See OSEG Appendix A for details. For some protection switching events, *conddescr* is: category, entity, description, additional text, protype.
condtype	Condition Type. This parameter identifies the type of event indication being reported. See OSEG Appendix A for details.
ocrdat	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
ocrtm	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
thlev	Threshold Level (starting in Release 2). Only used for Threshold Crossing Alerts (TCAs). The threshold level value is set by `ED-TCA-PROF`. Threshold Crossing Alerts should not be confused with FM alarms/events which are reported by **`REPT ALM`** and **`REPT EVT`**. FM alarms/events have signal degrade and signal fail thresholds. These thresholds are set by **`ED-rr`**.
monval	Monitored (that is, measured) Value (starting in Release 2). Only used for TCAs. See OSEG Appendix A for details.

Table 3-118 REPT EVT Output Parameters (Sheet 5 of 5)

Parameter Name	Description
tmper	Time Period (starting in Release 2). Only used for TCAs. Values are: ■ 15 minutes ■ 1 day. See OSEG Appendix A for details.

A report event message should be sent when a protection group is created. The information contained in the message should indicate that there was a protection switch to the active unit. That is, the **REPT EVT** message will be identical to those sent if there had really been a switch to the active unit.

For a DRIPATH protection group, if the working leg is active, *condtype*=WKSWBK; if the protection leg is active, *condtype*=WKSWPR-2. The AID of the protection group is also contained in the message.

For a 2F protection group, a message should be sent for both the east-side port and the west side port.
a) if working is active, send a **REPT EVT** message with *east*/*west*, WKSWBK
b) if protection is active, send **REPT EVT** message with *east*/*west*, WKSWPR-2.

For a 4F protection group, a message should be sent for both the east-side port (*eastwkg* AID) and the west side port (*westwkg* AID).
a) if working is active, *condtype* should equal WKSWBK
b) if protection is active, *condtype* should equal WKSWPR-ep or WKSWPR-wp.

For 1XNELEC and 1XN Optical protection groups, only one message will be sent (not N). If all working members are active, the AID of the first working member will be used. If protection is active, the AID of the protected working member will be used.
a) if the working unit is active, report *wrk1*, WKSWBK
b) if the protection unit is active, report *wrk*, WKSWPR-N

EXAMPLE OUTPUT

All examples in this section contain autonomous messages from bay 1 shelf 1.

The following **REPT EVT** autonomous message illustrates how an STM16 Loss of Signal (LOS) could be reported if the notification code was no alarm. Since the

REPT EVT autonomous message declares the occurrence of the LOS, the condition effect is Standing Condition (SC).

```
   LT-WBM 01-08-15 08:00:00
A  003 REPT EVT STM16
   "1-1-u-#-01-1:LOS,SC,01-01,07-59-59:\"Communications, STM16 po
rt, STM Loss Of Signal\""
;
```

The following **REPT EVT** autonomous message reports a lockout for a 1+1 optical port protection group:

```
   LT-WBM 01-08-15 08:12:00
A  015 REPT EVT OC3
   "1-1-o40-w-10-2:WKSWPR-2,TC,01-01,08-12-00:\"Protection Switch, OC3
port, Lockout,, 1+1\""
;
```

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT ALM

REPT ALM ENV

RTRV-ALM

RTRV-ALM-ENV

RTRV-COND

RTRV-HDR

NAME

REPT SW: Report Switch

The **REPT SW** autonomous message is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

DESCRIPTION

REPT SW messages are generated autonomously to report equipment protection switches of a duplex equipment unit pair. These equipment pairs are referred to as 1+1 equipment protection groups. If more than one circuit pack became active, then the output identifies each of the circuit packs.

Starting in Release 2.0, the **REPT EVT** command is used to report 1+1 equipment protection switch state changes that do not result in a change of active units.

OUTPUT FORMAT

The general format of a **REPT SW** message is as follows:

```
   tid date time
A  atag REPT SW
   "actid"
   (1 or more lines of the above)
;
```

OUTPUT PARAMETERS

Table 3-119 **REPT SW** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
atag	Automatic Tag. This is used for message sequencing. The number is incremented by one for each autonomous message. Values: ■ 000 through 999.

Table 3-119 **`REPT SW`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
actid	Active Identifier. This is the circuit pack AID of the equipment that was placed in the active state. See the AID table in OSEG Appendix A.

EXAMPLE OUTPUT

The following example shows a **`REPT SW`** message:

```
LT-WBM 01-08-15 08:00:00
A  001 REPT SW
   "sc-1-#-#-tmg0-cp"
;
```

RELATED TL1 MESSAGES

`OPR-PROTNSW`

`RLS-PROTNSW`

`RTRV-PROTN-GRP`

NAME

RLS-EXT-CONT: Release External Control

The **RLS-EXT-CONT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

RLS-EXT-CONT:*tid*:*aid*:*ctag*::[,*dur*];

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 set by the **OPR-EXT-CONT** command.

The **RLS-EXT-CONT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-120 **RLS-EXT-CONT** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. The ***aid*** identifies the external miscellaneous discrete control which is being released. Value(s): ■ **MISC_OUT1 … MISC_OUT8**.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-120 **`RLS-EXT-CONT`** Input Parameters

Parameter Name	Description
dur	Duration. This parameter is available starting in Release 3. This parameter sets the duration of the external control operation. Values: ■ **CONTS** Continuous duration (default value) ■ **MNTRY** Momentary duration of 300 ms. The default value CONTS is assumed when this parameter is omitted.

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
;
```

If the **`RLS-EXT-CONT`** command does not alter the existing attributes, i.e., the control referenced by the ***aid*** is already released, 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`** command **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **`RLS-EXT-CONT`** command.

EXAMPLE INPUT/OUTPUT

The following example shows a **RLS-EXT-CONT** command that clears an external miscellaneous discrete control 3:

```
RLS-EXT-CONT:LT-WBM:MISC_OUT3:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RLS-EXT-CONT** command.

RELATED TL1 MESSAGES

OPR-EXT-CONT

RTRV-ATTR-CONT

SET-ATTR-CONT

NAME

RLS-LPBK: Release Loopback

The **RLS-LPBK** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

1.

INPUT FORMAT

RLS-LPBK[-*modifier*]:*tid*:*aid*:*ctag*[::,,,*lpbktyp*];

Starting in Release 3.0 the input format is:

RLS-LPBK-*modifier*:*tid*:*aid*:*ctag*[::,,,*lpbktyp*];

DESCRIPTION

The **RLS-LPBK** command can be initiated by the user to remove a loopback on an interface/tributary in the network element.

The ***modifier*** in the **RLS-LPBK** command indicates the rate of the tributary on which the **RLS-LPBK** command is going to act. A **RLS-LPBK** command requesting the release of a cross-connect loopback on a tributary requires a ***modifier***. A facility loopback release request does not require a ***modifier***.

Starting in Release 3.0 the modifier is required for facility loopback requests.

When the network element receives a **RLS-LPBK** command from the user, the network element will release the loopback on the specified interface/tributary.

The **RLS-LPBK** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-121 **RLS-LPBK** Input Parameters

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate or port type on which the remove release loopback command is to act. Values: ■ **1GE** Only near-side loopback is supported. ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1) ■ **VC416C** (starting in Release 2) ■ **STM1** ■ **STM4** ■ **STM16** ■ **STM1E**.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. The ***aid*** determines the port or tributary AID for which the command is intended. See the AID table in OSEG Appendix A. Values: port or tributary AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
lpbktyp	This parameter indicates the type of loopback being released. Values: ■ **CRS** Cross-connect loopback (default) ■ **NSF** Near-Side Facility loopback for electrical/optical ports. ■ **FSF** Far-Side Facility loopback for electrical/optical ports.

OUTPUT FORMAT

The network element gives the following response to the **RLS-LPBK** command. If the interface or the tributary specified in the command is not in a loopback state prior to the execution of the **RLS-LPBK** command, the network element gives a normal completion response:

```
   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 the **RTRV-HDR** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RLS-LPBK** command which releases the cross-connect loopback on a VC3 tributary:

```
RLS-LPBK-VC3:LT-WBM:1-1-#-#-2-1-1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **RLS-LPBK** command.

RELATED TL1 MESSAGES

OPR-LPBK

RTRV-LPBK

NAME

RLS-PROTNSW: Release Protection Switch

The **RLS-PROTNSW** is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

RLS-PROTNSW:*tid*:[*aid*]:*ctag*::*protype*,[*rid*]:*spec_block*;

Starting in Release 2.1, **RLS-PROTNSW** has the following input format:

RLS-PROTNSW:*tid*:[*aid*]:*ctag*::*protype*,[*rid*],[*ppgname*]:*spec_block*;

DESCRIPTION

The **RLS-PROTNSW** command instructs the network element to clear a protection switch request on a protection group. See the **ENT-PROTN-GRP** command for a description of protection groups.

The **RLS-PROTNSW** command may generate a **REPT EVT** or **REPT SW** message.

A set of path protection groups can be identified by a path protection group name (***ppgname***). The name can be assigned when the path protection group is established via the **ENT-CRS** command and it can be modified by the **ED-PROTN-GRP** command.

Groups drawing their inputs from the same pair of ports should typically all be assigned the same name. For consistent operations among path protection groups with the same name, the working input tributaries should all be in the same port, and the protection input tributaries should all be in the same port. Groups with the same input ports but different output ports may have different names when desirable.

The **RLS-PROTNSW** command can operate on a set of path protection groups as identified by their ***ppgname***. If an input tributary AID (***aid***) is specified in addition to the ***ppgname***, then the command operates on the subset of protection groups that share both of these parameters.

For **PATHDRI**, the protection switch applies to all constituents of the identified tributary. For this case, the following table summarizes the use of path protection group names as related to **`RLS-PROTNSW`**.

Table 3-122 ***ppgname*** and Destination Usage

protection grp type	**command target id**		**comment**
	aid	**path protection group name**	
PATHDRI	not used	***ppgname***	operation applies to all tributaries that are group members of the ***ppgname*** (note 1)
PATHDRI	grp member (input) logical tributary AID	***ppgname***	operation applies to all tributaries that are group members of the ***aid, ppgname*** subset
PATHDRI	path prot grp id (output logical tributary AID)	not used	normal, non-aliasing target identification
Note 1: Group members are defined to be the working and protection input logical tributar-ies of the path protection group.			

The **`RLS-PROTNSW`** command does not generate a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-123 **`RLS-PROTNSW`** Input Parameters (Sheet 1 of 3)

Parameter Name	**Description**
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. If ***rid*** is specified, then ***aid*** can be omitted.

Table 3-123 RLS-PROTNSW Input Parameters (Sheet 2 of 3)

Parameter Name	Description
	If ***ppgname*** is specified, then ***aid*** can be omitted for a PATHDRI protection type. For each protection group type, ***aid*** can be a **protection group AID**. See ***protype*** for a list of the protection group types. For some protection groups, ***aid*** is not constrained to be a protection group AID. In this case, the protection group associated with the AID will be accessed. **Non protection group AIDs can be specified for the following types:** ■ **1+1**: port AID (starting in Release 1) ■ **2F**: port AID (starting in Release 1) ■ **1xNOPT**: port AID (starting in Release 3) ■ **EQPTTMG, EQPTSWFBR**, or **EQPTIOFBR**: circuit pack AID Starting with Release 2.0, **EQPTTMG** no longer applies to **RLS-PROTNSW**. ■ **PATHDRI** Input tributary AID (starting in Release 2.1). This option is only allowed if ***ppgname*** is specified (see the **DESCRIPTION** section for more information).
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ppgname	Path Protection Group Name (Starting in Release 2.1). Specifying this parameter can cause **RLS-PROTNSW** to operate on more than one protection group. See the **DESCRIPTION** section for more information. Storage and retrieval of the ***ppgname*** is case sensitive, but actual use of the ***ppgname*** to determine the corresponding protection group is case insensitive. It is an ASCII string of up to 24 characters from the TID character set. This parameter can only be specified for path protection groups. If specified for other than path protection groups, then the command will be DENY'd with IDNV. If input values are specified for ***aid*** and ***ppgname***, then the command will be DENY'd with IDNV if there is no protection group described by ***aid***, ***ppgname***.

Table 3-123 **`RLS-PROTNSW`** Input Parameters (Sheet 3 of 3)

Parameter Name	Description
	For a CONSTITUENTPATH protection type, if a value is specified for ***ppgname***, then an input tributary AID value must also be specified for ***aid***.
protype	Protection Type. Values: ■ **1+1** (starting in Release 1) ■ **2F** (starting in Release 1) ■ **1xNOPT** (starting in Release 3) ■ **PATHDRI** (starting in Release 1) All constituents of the protection group will be cleared. ■ **1xNELEC** ■ **EQPTTMG** ■ **EQPTSWFBR** Switch fabric protection. This protection type refers to the switch packs.
rid	Ring Identification Name. Storage and retrieval of the ***rid*** is case sensitive, but actual use of the ***rid*** to determine the corresponding protection group is case insensitive. Value: ASCII string of up to 15 characters from the TID character set. If this parameter is specified, then the command will operate on the protection group associated with that ring ID. If ***aid*** is specified, then ***rid*** can be omitted. This parameter is applicable for the following ***protype*** values: ■ **2F** (starting in Release 1) Starting in Release 3.0, the value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
spec_block	See the following "**`RLS-PROTNSW`** ***spec_block*** Parameters" table.

Table 3-124 `RLS-PROTNSW` *spec_block* Parameters

Parameter	Description / PROTYPE	Value
sc	Switch Command. This parameter is applicable to the following ***protypes***: Omitting a value for ***sc*** is equivalent to specifying a value of:	**CLEAR**
	■ **1+1** (starting in Release 1)	**CLEAR**
	■ **2F** (starting in Release 1)	**CLEAR**
	■ **1xNOPT** (starting in Release 3)	**CLEAR**
	■ **PATHDRI** (starting in Release 1)	**CLEAR**
	■ **1xNELEC** The **CLEARLOCKOUT** value is only applicable when clearing a lockout of a working unit. **CLEAR** must be used for all other cases. See also ***destaid***.	**CLEARLOCK-OUT**, **CLEAR**
	■ **EQPTTMG**, **EQPTSWFBR**, or **EQPTIOFBR**.	**CLEARFRCD**
	Starting with Release 2.0, **EQPTTMG** no longer applies to **`RLS-PROTNSW`**.	
destside	Destination. If the **`RLS-PROTNSW`** command is used to remove a LOCKOUT on all spans (LP-A), then either allowable value of ***destside*** results in all LOCKOUTs being removed. This parameter is required for the following ***protypes***:	
	■ **2F** (starting in Release 1)	**EAST**, **WEST**
destaid	Destination Entity AID. This parameter is applicable to the following ***protype(s)***:	
	■ **1xNELEC**.	circuit pack AID
	destaid only used when ***sc*** is **CLEAR-LOCKOUT**. For this case, ***destaid*** can only indicate a working unit. For all other cases, ***destaid*** must be omitted.	

OUTPUT FORMAT

If the **RLS-PROTNSW** request completes successfully, then 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 of the **RTRV-HDR** command.

EXAMPLE OUTPUT

The following example shows the successful completion of a **RLS-PROTNSW** command by the network element:

```
RLS-PROTNSW:LT-WBM:1-1-o13:123456::1+1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RLS-PROTNSW** command.

RELATED TL1 MESSAGES

DLT-CRS

ENT-CRS

OPR-PROTNSW

NAME

RLS-SYNCNSW: Release Synchronization Switch

The **RLS-SYNCNSW** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

RLS-SYNCNSW-*modifier*:*tid*::*ctag*::[*dest*];

DESCRIPTION

The **RLS-SYNCNSW** command can be initiated by user to request the network element to release (clear) any existing lockout, forced, or manual system timing reference switching or to release the forced request on the timing mode so that it will return to the provisioned locked mode from the holdover mode.

The **RLS-SYNCNSW** command generates a **REPT EVT** or **REPT ALM** message.

INPUT PARAMETERS

Table 3-125 **`RLS-SYNCNSW`** Input Parameters

Parameter Name	Description
modifier	Values: ■ **REF** — This specifies the system-assigned timing reference switch. ■ **MOD** — This specifies the system clock mode switch. Starting with Release 3.0, this parameter can also have the following value: ■ **OUTREF** — Specifies the external timing output switch.
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
dest	Assigned timing reference identifier - destination. This is the list of timing references available to the system clock. This parameter is omitted for the **MOD** ***modifier*** (i.e., when the reference is in forced mode). Values: ■ **EXTREF1** ■ **EXTREF2**. Starting with Release 1, this parameter can also have value: ■ **LINE1**. Starting with Release 2.1, this parameter can also have value: ■ **LINE2**. Starting with Release 3, this parameter can also have values: ■ **LINE3** ■ **LINE4** ■ **LINE5** ■ **LINE6**.

The following table defines which values of the ***dest*** parameter are applicable for each ***modifier*** value:

Table 3-126 Values of ***dest*** related to ***modifier***.

modifier	allowed values of ***dest***							
	EXTREF1	**EXTREF2**	**LINE1**	**LINE2**	**LINE3**	**LINE4**	**LINE5**	**LINE6**
REF	X	X	X	X	X	X	X	X
MOD	-	-	-	-	-	-	-	-
OUTREF	-	-	X	X	X	X	X	X

OUTPUT FORMAT

If the network element fully complies with the **RLS-SYNCNSW** request, the following output message is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to the **RLS-SYNCNSW** command as well.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RLS-SYNCNSW** command:

```
RLS-SYNCNSW-REF:LT-WBM::123456::extref1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **RLS-SYNCNSW** command as well.

RELATED TL1 MESSAGES

OPR-SYNCNSW

RTRV-SYNCN

SET-SYNCN

NAME

RTRV-ABN: Retrieve ABN Status

The **RTRV-ABN** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ABN:*tid*::*ctag*;

DESCRIPTION

The **RTRV-ABN** command retrieves the reason for the ABN (Abnormal) status light on the user panel.

The **RTRV-ABN** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-127 **RTRV-ABN** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV-ABN** command request completes successfully, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   ":outaid,reasonstr"
      <0 or more of the line above, for another outaid>
;
```

If the ABN (Abnormal) status light on the user panel is on, then there will be at least one output line.

If the ABN status light is not on, the following response is returned:

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

OUTPUT PARAMETERS

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

Table 3-128 **RTRV-ABN** Output Parameters

Parameter Name	Description
reasonstr	Reason string. This is a string of printable characters, surrounded by backslashed double quotes (\"). Values for a protection group AID: ■ \"manual switch active\" ■ \"forced switch active\" ■ \"lockout active\" ■ \"wait to restore state for protection group active\" Values for a logical tributary AID: ■ \"cross connect loopback active\" Values for a circuit pack AID: ■ \"manual switch active\" ■ \"forced switch active\" ■ \"lockout active\" Values for a timing reference AID (such as EXTREF1): ■ \"forced switch active\" ■ \"lockout active\". values for a system AID: ■ \"remote NE abnormal condition active\" Values for a shelf AID: ■ \"forced holdover active\" Values for a port AID: ■ \"facility loopback active - far side\" ■ \"facility loopback active - near side\" values for a timeslot AID: ■ \"tributary temporarily not protected\"

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-ABN** command:

```
RTRV-ABN:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   ":1-1-#-#-01-1,\"facility loopback active\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-ABN** command.

RELATED TL1 MESSAGES

RTRV-COND

NAME

RTRV-ALM-ENV: Retrieve Alarm Environment

The **RTRV-ALM-ENV** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ALM-ENV:*tid*:[*aid*]:*ctag*::[*ntfcncde*];

Starting in Release 4.0, the input syntax is

RTRV-ALM-ENV:*tid*:[*aid*]:*ctag*::[*ntfcncde*][,*almtype*];

DESCRIPTION

The **RTRV-ALM-ENV** command retrieves active environmental alarms of level Critical, Major, or Minor.

General Discussion of Alarms

See the **RTRV-ALM** command for a general discussion of Alarms.

Any environmental alarm reported by an autonomous **REPT ALM ENV** message, which is active when a **RTRV-ALM-ENV** message is received, is included in the **RTRV-ALM-ENV** response message.

Environmental alarms of level Not Alarmed are not included in a **RTRV-ALM-ENV** response. They are included in the **RTRV-COND** response.

The **RTRV-ALM-ENV** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-129 **RTRV-ALM-ENV** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This is the address of the equipment component or facility, as identified by the modifier, for which an alarm is being requested. (See the AID table in OSEG Appendix A.) Value: Input miscellaneous discrete AID. An “all” AID range is supported. Omitting a value for AID is also equivalent to "all".
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
almtype	Alarm Type. This parameter identifies the type of alarm indication being reported. it may have one of the following value(s): ■ **MISC** This is the default (equivalent to omitting a value for ***almtype***).
ntfcncde	Notification Code. This is the alarm level for which the current alarms are requested, and it may have one of the following values: ■ **ALL** Requests all alarms. This is the default (equivalent to omitting a value for ***ntfcncde***). ■ **CR** Critical alarm ■ **MJ** Major alarm ■ **MN** Minor alarm. If the ***ntfcncde*** is valid, then the network element’s response to the user is limited to the specified notification code. If no notification code is provided, then the network element’s response includes all alarm levels.

OUTPUT FORMAT

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

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

Table 3-130 **RTRV-ALM-ENV** Output Parameter

Parameter Name	Description
aid	Access Identifier. This is the address for which an alarm is being reported. Values: Input miscellaneous discrete AID.
almtype	Alarm Type. This parameter identifies the type of alarm indication being reported. The only allowable value is MISC.
ntfcncde	Notification Code. This is the alarm level and has one of the following values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm.
ocrdat	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
ocrtm	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
almmsg	A string describing the environmental point. Value: An alphanumeric string, upper and lower case, spaces and periods allowed, up to 26 characters.

EXAMPLE INPUT/OUTPUT

For the following example, all environmental alarms are retrieved. Note that misc_in-7 is listed first because its alarm level is higher than that of misc_in-5:

```
RTRV-ALM-ENV:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "misc_in7:MJ,MISC,01-01,07-49-23,\"open door\""
   "misc_in5:MN,MISC,01-01,06-32-25,\"stairway 5 temperature\""
;
```

The following example demonstrates how retrieved alarms can be limited by specifying an ***aid***:

```
RTRV-ALM-ENV:LT-WBM:misc_in-7:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "misc_in7:MJ,MISC,01-01,07-49-23,\"open door\""
;
```

The following example demonstrates how retrieved alarms can be limited by specifying the notification code:

```
RTRV-ALM-ENV:LT-WBM::123456::MN;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "misc_in5:MN,MISC,01-01,06-32-25,\"stairway 5
temperature\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **RTRV-ALM-ENV** command also.

If a **RTRV-ALM-ENV** command is received with an invalid ***ntfcncde*** parameter, then the following error response is returned:

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

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT ALM

REPT ALM ENV

REPT COND

REPT EVT

RTRV-ALM

RTRV-COND

RTRV-HDR

SET-ATTR-ENV

NAME

RTRV-ALM: Retrieve Alarm

The **RTRV-ALM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ALM[-*modifier*]:*tid*:[*aid*]:*ctag*::[*ntfcncde*],[*condtype*],
[*srveff*],,,;

DESCRIPTION

RTRV-ALM command messages can be initiated by the user to retrieve all active alarms of level Critical, Major, or Minor from a network element. Any alarm reported by an autonomous **REPT ALM** message which is active when a **RTRV-ALM** message is received, is included in the **RTRV-ALM** response message.

Alarms of level Not Alarmed are reported by **RTRV-COND**.

The alarms are reported one line per condition, similar to the autonomous messages conveyed by **REPT ALM**.

Environmental alarms of level Critical, Major, or Minor are reported by **RTRV-ALM-ENV**.

General Discussion of Alarms

This section describes alarms and the various TL1 commands that report alarms.

Alarms can have levels (notification codes) of critical, major, minor, not alarmed, or not reported (CR, MJ, MN, NA, NR).

ED-ASAP-PROF is used to specify the notification code for alarms.

REPT ALM autonomous messages are used to report all alarms of level CR, MJ, MN. There is a message when the alarm is declared and another when the alarm is cleared.

REPT ALM ENV autonomous messages are used to report environmental alarms of level CR, MJ, and MN. Environmental events of alarm level NA are reported using **REPT EVT**.

RTRV-ALM is an on-demand version of the autonomous **REPT ALM**. The on-demand commands only report alarms that are still set when the command is executed.

RTRV-ALM-ENV is an on-demand version of **REPT ALM ENV**.

REPT EVT autonomous messages are used to report alarms of level NA. Nontransient status conditions result in two autonomous messages: one when the event is declared and another when it clears. Transients only result in one autonomous message. In addition to events reported via **REPT EVT** autonomous messages, there are other autonomous messages for specific types of events. For example, **REPT DBCHG** autonomous messages report when provisioning changes are made. **REPT EVT** does not report events (for example, database changes) that are reported by other autonomous messages.

RTRV-COND is an on-demand version of the autonomous **REPT EVT**. This connection would have been clearer if **RTRV-COND** were instead called **RTRV-EVT**, but this approach was not used by Telcordia and this product is constrained by their decision. **RTRV-COND** only report alarms that are still set when the command is executed.

RTRV-FLT-STATE can be used to determine if there are any alarms of level NR (not reported).

If **INH-MSG** has been previously envoked, then no autonomous messages are reported on that login session. Alarms will still be reported by **RTRV-ALM**, but events will not be reported by **REPT ALM** or **REPT EVT.** Autonomous message reporting can be turned back on by using **ALW-MSG**.

An individual user can use **ED-USER** to specify what types of autonomous messages should be autonomously reported (for example, database change messages but not protection switching events) to their TL1 session. **ED-USER-SECU** is similar to **ED-USER**, but the superuser uses **ED-USER-SECU** to control autonomous message reporting for a specific user.

INH-ALM can be used to inhibit audible and visual alarms. **ALW-ALM** allows (enables) the audible and visual alarms.

The **RTRV-ALM** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-131 **RTRV-ALM** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	This parameter is a message modifier to the command and may have one of the following value(s): ■ **ALL** — This requests all alarms. This is the default (equivalent to the value being omitted). Starting in Release 3, the *aidtype* output parameter values can be used for the ***modifier*** parameter. See the **RTRV-ALM** Output Parameters table for *aidtype* values.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This is the address of the entity for which the current conditions are requested. For initial releases, the ***aid*** may not be specified. Starting in Release 3, ***aid*** may be specified. The ***aid*** value entered should be a valid ***aid*** for a given ***modifier***. See the AID table in OSEG Appendix A. Not only can an AID be specified for a physical entity such as a circuit pack or a port, it can also be specified for a protection group.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ntfcncde	Notification Code. This is the alarm level for which the current alarms are requested, and it may only have the following value or be omitted: ■ **ALL** — Requests all alarms. This is the default (equivalent to not specifying a value for ***ntfcncde***).
condtype	Condition Type. This parameter identifies the type of alarm indication being reported. If the value is omitted, it is equivalent to specifying a value of **ALL**. Starting in Release 3, a value for ***condtype*** may be specified. See OSEG Appendix A for details.

Table 3-131 **RTRV-ALM** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
srveff	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 may have the following value or it may be omitted: ■ **ALL** Requests all alarms. This is the default (equivalent to no value being specified). Starting in Release 3, the following values are also allowable: ■ **SA** Service-affecting alarm condition ■ **NSA** Nonservice-affecting alarm or status condition.

OUTPUT FORMAT

The response to a valid **RTRV-ALM** request is as follows:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm[:\"conddescr\"]"
   (0 or more lines of the above)
;
```

Applicable output lines are ordered as follows:

1. Alarms are reported from greatest to least severity (CR, MJ, MN).
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

Refer to the **RTRV-HDR** command **OUTPUT PARAMETER**S section for a normal completion response. The output parameters listed there also apply to the **RTRV-ALM** command.

Table 3-132 **`RTRV-ALM`** Output Parameters (Sheet 1 of 2)

Parameter Name	Description	
aid	Access Identifier. This is the address of the equipment component or facility site ID for which an alarm condition is being reported. For protection switch events (automatic, manual, force, and lockout) the address of the affected "service" or "from" entity is shown. See the AID table in OSEG Appendix A.	
aidtype	Access Identifier Type. It may have one of the following values:	
	■ COM	Common. An event that applies to the whole network element system; e.g. a processing error.
	■ EQPT	An equipment-related event
	■ E1	A timing reference event at the E-1 level (starting in Release 1)
	■ 1GE	An event at the 1 gigabit ethernet level (Starting in Release 3).
	■ VCG	An event on a virtual concatenated group (Starting in Release 3)
	■ STM1	A facility-related event for synchronous transport mode 1 (starting in Release 1)
	■ STM1E	A facility-related event for synchronous transport mode 1, electrical (starting in Release 1)
	■ STM4	A facility-related event for synchronous transport mode 4 (starting in Release 2)
	■ STM16	A facility-related event for synchronous transport mode 16 (starting in Release 1)
	■ STM64	A facility-related event for synchronous transport mode 64 (starting in Release 1)
	■ VC3	A facility-related event for virtual container 3 (starting in Release 1)
	■ VC4	A facility-related event for virtual container 4 (starting in Release 1)
	■ VC44C	A facility-related event for a concatenated VC signal (starting in Release 1)
	■ VC416C	A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 2).

Table 3-132 **`RTRV-ALM`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
condtype	Condition Type. This parameter identifies the type of alarm indication being reported. See OSEG Appendix A for details.
ntfcncde	Notification Code. This is the alarm level. Values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm.
srveff	Service Effect (or condition effect). This indicates the effect of the reported alarm/status condition on the network element. Values: ■ SA Service-affecting alarm condition ■ NSA Nonservice-affecting alarm or status condition.
ocrdat	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
ocrtm	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
conddescr	Description Of The Condition. The general format is: category, entity, description, additional text. If there is no additional text, then the trailing comma may be omitted. See OSEG Appendix A for details. Example: Communications, OC-3 port, Loss Of Signal. Additional text will be limited to 24 ASCII characters.

EXAMPLE INPUT/OUTPUT

For the following example, the alarms/status are for bay 1, shelf 1:

```
RTRV-ALM:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-04-1,STM16,CR,LOS,SA,01-01,07-29-13:\"Communications,
 STM16 port, STM Loss Of Signal\""
   "1-1-u-#-01-3,STM1:MJ,T-BERL,SA,12-31,03-50-32:\"Communications,
 STM1 port, MSect Excessive Error\""
;
```

The following example demonstrates how alarms can be limited by specifying a modifier:

```
RTRV-ALM-OC48:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-04-1,OC48:CR,LOS,SA,01-01,07-29-13:\"Communications, OC48
port, Loss Of Signal\""
;
```

The following example requests alarm/status information for bay 1, shelf 1. The response indicates there were no alarms for that AID:

```
RTRV-ALM:LT-WBM:1-1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

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

If a **RTRV-ALM** command is received with an invalid input parameter, then the following error response is returned:

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

RELATED TL1 MESSAGES

ALW-ALM

ALW-MSG

ED-ASAP-PROF

INH-ALM

INH-MSG

REPT ALM

REPT ALM ENV

REPT EVT

RTRV-ALM-ENV

RTRV-ASAP-PROF

RTRV-COND

RTRV-FLT-STATE

RTRV-HDR

NAME

`RTRV-ASAP-ASGNMT:` Retrieve ASAP Assignment

The **RTRV-ASAP-ASGNMT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ASAP-ASGNMT:*tid*:*aid*:*ctag*::*pftype*,*pfname*;

DESCRIPTION

The **RTRV-ASAP-ASGNMT** command retrieves a list of AIDs, for a given shelf, that identifies all users of an alarm severity assignment profile of a specific type (***pftype***) and a specific name (***pfname***).

General Description of Alarm Severity Assignment Profiles

For a general description of Alarm Severity Assignment Profiles, see the **ENT-ASAP-PROF** command which describes how:

- **DLT-ASAP-PROF** is used to delete an ASAP profile.
- **ED-ASAP-PROF** is used to change the name of a profile or its parameter values.
- **ENT-ASAP-PROF** is used to create a new profile.
- **RTRV-ASAP-ASGNMT** retrieves the AIDs that are using the profile.
- **RTRV-ASAP-PROF** retrieves the names of profiles and their parameter values.

Table 1 of **ED-ASAP-PROF** gives details about each profile type. It lists the parameters for each profile, a description of the parameters, and the default values.

The **RTRV-ASAP-ASGNMT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-133 RTRV-ASAP-ASGNMT Input Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. Identifies the bay, shelf for which the ***pftype***, ***pfname*** users are to be identified. Value(s): ■ shelf AID. See the AID table in OSEG Appendix A.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
pftype	Profile Type. This indicates the type of ASAP profile and may have one of the following value(s): ■ **APS** Automatic Protection Switch ■ **BLSR** Bilateral Switched Ring Protection Switch (for an SDH product, this also applies to MS-SPRing). ■ **DRIPATH** DRI/Path Protection Switch. This value is available starting with Release 3. ■ **ENET** Ethernet ■ **ENV** Environmental (Miscellaneous Discrete) This value is available starting with Release 3. ■ **EQPT** Equipment ■ **PT** Path terminating, SONET ■ **PTSDH** Path terminating, SDH ■ **SDH** STM-N Port ■ **SYS** System Events ■ **TIMING** System Timing ■ **TRIBSDH** AU-N point-point tributary (nonprotected tributary)

Table 3-133 **RTRV-ASAP-ASGNMT** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
pfname	Profile Name. This indicates the name of the ASAP profile. Value: See the **ENT-ASAP-PROF** command for the values of this parameter.

OUTPUT FORMAT

If the network element fully complies with the **RTRV-ASAP-ASGNMT** command, then the following completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid_output:pftype,pfname" (0 or more lines)
;
```

OUTPUT PARAMETERS

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

Table 3-134 **RTRV-ASAP-ASGNMT** Output Parameter

Parameter Name	Description
aid_output	Access Identifier of a user of the ***pftype***, ***pfname*** profile. See the AID table in OSEG Appendix A. It must start with the same bay AID, shelf AID that was specified via input AID.
pftype	Profile Type. This indicates the type of ASAP profile.
pfname	Profile Name. This indicates the name of the ASAP profile.

EXAMPLE INPUT/OUTPUT

The following example retrieves a list of AIDs for Bay 3, Shelf 2. The profiles must be of profile type SONET and profile name gte. The AIDs that are returned must be for Bay 3, Shelf 2 (start with 3-2).

```
RTRV-ASAP-ASGNMT:LT-WBM:3-2:123456::sonet,gte;

   LT-ABM 01-08-15 08:00:00
M  123456 COMPLD
   "3-2-o23-w-04-1-1:sonet,gte"
   "3-2-o23-w-04-1-3:sonet,gte"
   "3-2-u-#-01-4-1:sonet,gte"
   "3-2-u-#-01-8-1:sonet,gte"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **RTRV-ASAP-ASGNMT** command.

If an invalid ***pftype*** or ***pfname*** parameter is specified, then the following error response is returned:

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

If the system receives a profile name that does not exist for that profile type, then the following error response is returned:

```
   sid date time
M  ctag DENY
   IENE
   /* Input, Entity Not Exist */
;
```

RELATED TL1 MESSAGES

DLT-ASAP-PROF

ED-ASAP-PROF

ENT-ASAP-PROF

RTRV-ASAP-PROF

NAME

RTRV-ASAP-PROF: Retrieve ASAP Profile.

The **RTRV-ASAP-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ASAP-PROF:*tid*::*ctag*::*pftype*[,*pfname*];

DESCRIPTION

The **RTRV-ASAP-PROF** command retrieves information about one or more alarm severity assignment profile(s).

The type of profile (**APS**, **BLSR**, **...**) must be specified. Whether or not the profile's name is specified determines the type of information that is retrieved. If the name is not specified, then the **RTRV-ASAP-PROF** command retrieves a list of all profile names of the specified type. If the name is specified, then it retrieves the parameter values of the specified type, name.

For a general description of Alarm Severity Assignment Profiles, see **ENT-ASAP-PROF**.

The **RTRV-ASAP-PROF** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-135 **RTRV-ASAP-PROF** Input parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
pftype	Profile Type. This indicates the type of ASAP profile and may have one of the following values: ■ **APS** Automatic Protection Switch ■ **BLSR** Bilateral Switched Ring Protection Switch (for an SDH product, this also applies to MS-SPRing). ■ **DRIPATH** DRI/Path Protection Switch (starting in Release 1) ■ **ENET** Ethernet (starting in Release 3) ■ **ENV** Environmental (Miscellaneous Discrete) (Starting in Release 3.) ■ **EQPT** Equipment ■ **PT** Path terminating, SONET (starting in Release 3) ■ **PTSDH** Path terminating, SDH (starting in Release 3) ■ **SDH** STM-N Port ■ **SYS** System Events ■ **TIMING** System Timing ■ **TRIBSDH** VC-N tributary
pfname	Profile Name. This indicates the name of the ASAP profile. Value: See the **ENT-ASAP-PROF** command for the values of this parameter. If ***pfname*** is omitted, then all profile names of type ***pftype*** will be returned.

OUTPUT FORMAT

If the network element fully complies with the **RTRV-ASAP-PROF** command and ***pfname*** is omitted, then the following completion response is returned:

```
   sid date time
M  ctag COMPLD
   "Pftype=pftype,Name=Default"
   "Pftype=pftype,Name=pfname"
   ...
   "pftype=pftype,name=pfname"
;
```

There may be 0 or more "***pfname***" lines, where each line gives the name of an ASAP profile of type ***pftype****.*

Even if **ENT-ASAP-PROF** has never been used to create a profile for this ***pftype***, **RTRV-ASAP-PROF** will still return one profile: "Default."

If the network element fully complies with the **RTRV-ASAP-PROF** command and ***pfname*** is not omitted, then the output is as follows:

```
   sid date time
M  ctag COMPLD
   "pftype=pftype,name=pfname"
   "spec_block"
;
```

If ***pftype***, ***pfname*** does not exist, then the request is denied.

OUTPUT PARAMETERS

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

Table 3-136 **`RTRV-ASAP-PROF`** Output Parameters (Sheet 1 of 7)

Parameter Name	Description
pftype	Profile Type. This indicates the type of ASAP profile and may have one of the following values: ■ APS — Automatic Protection Switch ■ BLSR — Bilateral Switched Ring Protection Switch (for an SDH product, this also applies to MS-SPRing) ■ DRIPATH — DRI/Path Protection Switch (starting in Release 1) ■ ENET — Ethernet ■ ENV — Environmental (Miscellaneous Discrete). Starting in Release 3. ■ EQPT — Equipment ■ PT — Path terminating, SONET ■ PTSDH — Path terminating, SDH ■ SDH — STM-N Port ■ SYS — System Events ■ TIMING — System Timing ■ TRIBSDH — VC-N tributary
pfname	ASAP profile name.
spec_block	Each of the following specification block parameters may have one of the following values: ■ CR — Critical ■ MJ — Major ■ MN — Minor ■ NA — No Alarm ■ NR — Not Reported. For any specific value of *pftype*, each applicable specification block parameter will be reported.

Table 3-136 **RTRV-ASAP-PROF** Output Parameters (Sheet 2 of 7)

Parameter Name	Description	
pftype	**Keyword**	**Description**
APS		
	fop	APS Failure of Protocol (starting in Release 1). This APS parameter applies to 1+1 optical protection groups. All other APS parameters apply only to 1xNOPT.
BLSR		# In some releases, the description may include BLSR at the beginning of the string.
	blsrinaps	Inconsistent APS Codes. #
	blsrimaps	Improper APS Codes. #
	blsrdkb	Default K-bytes. #
	blsrts	Traffic Squelched. #
	rsmi	Ring Squelch Map Inconsistent.
	rsmc	Local Squelch Map Conflict.
	rinc	Ring Incomplete.
	ropn	Ring Open.
	nidm	Node ID Mismatch.
	dprn	Duplicate Ring Node.
	urt	Unknown Ring Type (starting in Release 1).
	irpm	Inconsistent Ring Prot Mode (starting in Release 1).
	cable	E/W Cable Error (starting in Release 1).
	rdip	Ring Discovery in Progress.
	rsip	Ring Startup in Progress.
	nut_nopr	Local NUT Not Operational (starting in Release 4).
	nut_inxcgrn	NUT Inconsistent XC Granularity (starting in Release 4).
	nut_dsbld	NUT Disabled (starting in Release 4).
	nut_tmpprv	Temporary NUT Provisioned (starting in Release 4).

Table 3-136 **RTRV-ASAP-PROF** Output Parameters (Sheet 3 of 7)

Parameter Name	Description	
	etp	Extra Traffic Preempted.
	rpss	Ring Prot Switching Suspended (starting in Release 2).
	las	Line Automatic Switch (starting in Release 3)
DRIPATH		Starting in Release 1.
	psact	Path Switch Active.
	psfail	Path Switch Failure.
	psinh	Path Switch Inhibited.
ENET		
	sa_lanlos *nsa_lanlos*	LAN Loss of Signal.
	sa_lananm *nsa_lananm*	LAN Auto Negotiation Mismatch.
	sa_loa *nsa_loa*	Loss of Alignment.
	sa_gfplof *nsa_gfplof*	Loss of Frame Delineation.
	sa_vcgsf *nsa_vcgsf*	VCG Signal Fail.
	sa_clopc *nsa_clopc*	Loss of Partial Capacity
	sa_clotc *nsa_clotc*	Loss of Total Capacity
	sa_cfopr *nsa_cfopr*	Failure of Protocol Rx
	sa_cfopt *nsa_cfopt*	Failure of Protocol Tx
ENV		
	*misc_in*n (n=1-16)	Miscellaneous Discrete Inputs (starting in Release 3).

Table 3-136 **RTRV-ASAP-PROF** Output Parameters (Sheet 4 of 7)

Parameter Name	Description	
EQPT		
	sa_cpfail *nsa_cpfail*	Service-Affecting Circuit Pack Failure Nonservice-Affecting Circuit Pack Failure.
	sa_cpuneq *nsa_cpuneq*	Circuit Pack Unequipped/Missing.
	sa_mcpuneq *nsa_mcpuneq*	Mate Circuit Pack Unequipped (starting in Release 1).
	sa_cpinv *nsa_cpinv*	Circuit Pack Invalid.
	sa_nvmw *nsa_nvmw*	Non-Volatile Memory Wearout.
	sa_als *nsa_als*	Automatic Laser Shutdown.
	sa_fan *nsa_fan*	Fan Failure.
	sa_fuse *nsa_fuse*	Power/Fuse Failure.
	sa_rsrcusg *nsa_rsrcusg*	Resource Usage (starting in Release 2).
	sa_mmis *nsa_mmis*	Memory Mismatch (starting in Release 2).
	sa_nvmusg *nsa_nvmusg*	Non-Volatile Memory Usage (starting in Release 2).
	sa_dccpr *nsa_dccpr*	DCC Partition Repair (starting in Release 3).
	sa_dccto *nsa_dccto*	DCC Tunnel Overflow (starting in Release 3).
PT		
	lop	Loss of Pointer - Path.
	ais	Alarm Indication Signal - Path.
	ber	Bit Error/Signal Degrade - Path.
	uneq	STS Path Unequip.
	rfi	Remote Failure Indication - Path.

Table 3-136 **RTRV-ASAP-PROF** Output Parameters (Sheet 5 of 7)

Parameter Name	Description	
	plm	STS Payload Label Mismatch.
	lom	Loss of Multiframe.
	sqm	Sequence Number Mismatch.
PTSDH		
	hpf_lop	HP Loss of Pointer.
	hpf_ssf	HP Server Signal Failure.
	hpf_plm	HP Payload Label Mismatch.
	hpf_rdi	HP Remote Defect Indication.
	hpf_deg	HP Signal Degrade.
	hpf_tim	HP Trace Identifier Mismatch.
	hpf_uneq	HP Unequip.
	hpf_lom	Loss of Multiframe.
	hpf_sqm	Sequence Number Mismatch.
SDH		
	sa_stmf_los *nsa_stmf_los*	Service-Affecting STM Loss of Signal Nonservice-Affecting STM Loss of Signal.
	sa_plos *nsa_plos*	Pulsed Loss of Signal.
	sa_rsf_lof *nsa_rsf_lof*	STM Loss of Frame.
	sa_msf_ais *nsa_msf_ais*	MSect Alarm Indication Signal.
	sa_msf_rdi *nsa_msf_rdi*	MSect Remote Failure Indication.
	sa_msf_exc *nsa_msf_exc*	MSect Excessive Error.
	sa_msf_deg *nsa_msf_deg*	MSect Signal Degrade.
	sa_msf_ssf *nsa_msf_ssf*	MSect Server Signal Failure.

Table 3-136 **RTRV-ASAP-PROF** Output Parameters (Sheet 6 of 7)

Parameter Name	Description	
	sa_dccrs *nsa_dccrs*	DCC RSect Failure.
	sa_dccms *nsa_dccms*	DCC MSect Failure (starting in Release 1).
	sa_lidrsmm *nsa_lidrsmm*	LinkID RSect Mismatch.
	sa_lidmsmm *nsa_lidmsmm*	LinkID MSect Mismatch (starting in Release 1).
	sa_unsrs *nsa_unsrs*	User-Network Side RSect Failure.
	sa_unsms *nsa_unsms*	User-Network Side MSect Failure (starting in Release 1).
		The parameters *sa_dccrsdu* and *nsa_dccrsdu* are replaced in Release 1 by *dccrsdu*, SYS ASAP.
		The parameters *sa_dccmsdu* and *nsa_dccmsdu* are replaced in Release 1 by *dccmsdu*, SYS ASAP.
SYS		
	arst	Autonomous Reset.
	swerr	Software Error.
	omerr	Out of Memory Error.
	ferr	File Error.
	adbf	Auto Database Backup Failure.
	stqlc	System Timing Quality Level Chg.
	almtst	Alarm Test.
	dccrsduc	DCC RSect Disabled-Unavailable (starting in Release 1).
	dcctypm	DCC Type Mismatch (starting in Release 1).
TIMING		
	syncref	Sync Reference Failure (external reference).
	holdover	System Clock Holdover.

Table 3-136 **RTRV-ASAP-PROF** Output Parameters (Sheet 7 of 7)

Parameter Name	Description	
	linesync	Line Sync Reference Failure (starting in Release 1).
	clkoutq	ClkOut Quality Failure (starting in Release 3).
TRIBSDH		
	sa_auf_lop *nsa_auf_lop*	sa AU Loss of Pointer nsa AU Loss of Pointer.
	sa_auf_ais *nsa_auf_ais*	AU Alarm Indication Signal.
	sa_hpf_rdi *nsa_hpf_rdi*	HP Remote Defect Indication.
	sa_hpf_uneq *nsa_hpf_uneq*	HP Unequip.
	sa_hpf_exc *nsa_hpf_exc*	HP Excessive Error.
	sa_hpf_deg *nsa_hpf_deg*	HP Signal Degrade.
	sa_auf_srm *nsa_auf_srm*	AU Signal Rate Mismatch (starting in Release 2).

EXAMPLE INPUT/OUTPUT

In the following example, the profile type is specified to be SONET and the profile name is not specified, so a list of all profiles of type SONET is retrieved:

```
RTRV-ASAP-PROF:LT-WBM::123456::SONET;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "Pftype=SONET,Name=Default"
   "Pftype=SONET,Name=gte"
;
```

In the following example, the profile type is specified to be SONET and the profile name is gte. The parameter values for that profile are retrieved:

```
RTRV-ASAP-PROF:LT-WBM::123456::SONET,gte;

   LT-WBM 01-08-15 08:00:00
   "Pftype=SONET,Name=gte"
   "sa_los=MJ,sa_lof=MJ,sa_aisl=NR,sa_rfil=NR,sa_eber=MJ,sa_ber=MJ,
sa_dccsect=MJ,sa_dccline=MJ,nsa_los=MN,nsa_lof=MN,nsa_aisl=NR,nsa_r
fil=NR,nsa_eber=MN,nsa_ber=MN,nsa_dccsect=MN,nsa_dccline=MN"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **RTRV-ASAP-PROF** command.

The following is the **Input, Data Not Valid** error response:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The following is the **INPUT, Data Not Valid** error response:

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

The following condition will cause an IDNV error response (for a specific product release, some of these conditions might not be applicable):

- The ***pfname*** parameter specified is not valid or too long.

The following is the **INPUT, Parameter Not Consistent** error response:

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

The following condition will cause an IPNC error response:

- An invalid ***pftype*** parameter is specified.

RELATED TL1 MESSAGES

DLT-ASAP-PROF

ED-ASAP-PROF

ENT-ASAP-PROF

NAME

RTRV-ATTR-ALM: Retrieve Attribute Alarm

The **RTRV-ATTR-ALM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ATTR-ALM:*tid*::*ctag*;

DESCRIPTION

The **RTRV-ATTR-ALM** command can be used to retrieve alarm delay and the alarm clear delay for two sets of alarms: facility alarm group (all communications notifications) and equipment alarm group (all equipment and processor error notifications). The **RTRV-ATTR-ALM** command also retrieves the state of office alarms - whether they are enabled or disabled. This state can be changed by the **ALW-ALM** and **INH-ALM** commands.

The **RTRV-ATTR-ALM** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-137 **RTRV-ATTR-ALM** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

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
   "almdelfclt=AlarmDelayFacility,clrdelfclt=ClearDelayFacility"
   "almdeleqpt=AlarmDelayEquipment,clrdeleqpt=ClearDelayEquipment"
   "almenable=OfficeAlarmEnable"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command. Parameters that specifically apply to the **RTRV-ATTR-ALM** command response are defined in the following table:

Table 3-138 **RTRV-ATTR-ALM** Output Parameters

Parameter Name	Description
almdelfclt	Alarm Delay Facility. Time in seconds a facility event has to be continuously present before an alarm is set. Values: 0-60.
clrdelfclt	Clear Delay Facility. Time in seconds a facility event has to be continuously clear before an alarm is cleared. Values: 0-60.
almdeleqpt	Alarm Delay Equipment. Time in seconds an equipment event has to be continuously present before an alarm is set. Values: 0-60.
clrdeleqpt	Clear Delay Equipment. Time in seconds an equipment event has to be continuously clear before an alarm is cleared. Values: 0-60.
almenable	Office Alarm Enable enables/disables audible and visual alarms. Values: ENABLE/DISABLE.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-ALM** command where the Alarm Delay Facility value has been provisioned to 20 seconds; the Clear Delay Facility value has been provisioned to 0 seconds; the Alarm Delay Equipment value has been provisioned to 10 seconds; and the Clear Delay Equipment value has been provisioned to 10 seconds:

```
RTRV-ATTR-ALM:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "almdelfclt=12,clrdelfclt=12"
   "almdeleqpt=10,clrdeleqpt=10"
   "almenable=ENABLE"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-ATTR-ALM** command.

RELATED TL1 MESSAGES

ALW-ALM

INH-ALM

SET-ATTR-ALM

NAME

RTRV-ATTR-CONT: Retrieve Attribute Control

The **RTRV-ATTR-CONT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ATTR-CONT*:tid:aid:ctag;*

DESCRIPTION

The **RTRV-ATTR-CONT** command can be initiated by general users to retrieve the provisioned description(s) associated with an external discrete control. 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*** = **MISC_OUT1** is associated with a fan (and not a sprinkler) before operating it. The **SET-ATTR-CONT** command can be used to set the description of a miscellaneous discrete control.

The **RTRV-ATTR-CONT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-139 RTRV-ATTR-CONT Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-139 **RTRV-ATTR-CONT** Input Parameters

Parameter Name	Description
aid	Access Identifier. The ***aid*** identifies the external miscellaneous discrete control for which attributes are being retrieved. (See AID table in OSEG Appendix A.) Values: ■ **MISC_OUT1 … MISC_OUT8**. Default ***aid*** retrieves information for all discrete controls.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

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:\"contmsg\",durmode,initcstat"
   ...
   "aid:\"contmsg\",durmode,initcstat"
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command. Parameters that specifically apply to the **RTRV-ATTR-CONT** command are defined below.

Table 3-140 **RTRV-ATTR-CONT** Output Parameters

Parameter Name	Description
aid	The *aid* identifies the external control for which the provisioned names are being retrieved. When the default *aid* is used, the output is sorted by *aid*, with MISC_OUT1 and its description printed first and MISC_OUT2 second, etc.
contmsg	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 (\").

Table 3-140 **RTRV-ATTR-CONT** Output Parameters

Parameter Name	Description
durmode	'dur' mode. This parameter defines in which mode the device connected to the MDO is expected to be operated. Values: ■ CONTS ■ MNTRY.
initcstat	Initial Control State. This parameter defines the state the MDO must have in order to put the connected device in the "off"-state. Values: ■ OPER ■ RLS.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-CONT** command to retrieve the description of the third miscellaneous discrete control:

```
RTRV-ATTR-CONT:LT-WBM:MISC_OUT3:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "MISC_OUT3:\"fan 3\",CONTS,OPER"
;
```

The following example shows a **RTRV-ATTR-CONT** command to retrieve the description of all miscellaneous discrete controls:

```
RTRV-ATTR-CONTR:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "MISC_OUT2:\"sprinkler 2\",CONTS,RLS"
   "MISC_OUT3:\"fan 3\",CONTS,OPER"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-ATTR-CONT** command.

RELATED TL1 MESSAGES

OPR-EXT-CONT

RLS-EXT-CONT

RTRV-ALM

NAME

RTRV-ATTR-ENV: Retrieve Attribute Environment

The **RTRV-ATTR-ENV** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ATTR-ENV:*tid*:[*aid*]:*ctag*;

DESCRIPTION

The **RTRV-ATTR-ENV** command can be used to retrieve the description of an environmental point. It also
indicates the ASAP profile that was assigned to the environmental point. That profile specifies the alarm level. The **SET-ATTR-ENV** command can be used to set the description of an environmental point. It also can be used to assign an ASAP profile to the environmental point.

The named profile only contains one parameter, the alarm level, which can have a value: **CR**, **MJ**, **MN**, **NA**, **NR**. Thus, assigning a profile to an environmental point is equivalent to assigning an alarm level. If the
SET-ATTR-ENV command has never been used to assign a profile to the environmental point, then it uses the profile named “default.”

The **RTRV-ATTR-ENV** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-141 **RTRV-ATTR-ENV** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. The *aid* identifies the environment point. (See the AID table in OSEG Appendix A.) Value: Input miscellaneous discrete AID. An “all” AID range is supported. Omission of the value, results in the description of all environmental points.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element fully complies with the **RTRV-ATTR-ENV** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid:,,\"envmsg\":pfname"
   (more lines for default AID)
;
```

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command. Parameters that specifically apply to the **RTRV-ATTR-ENV** command response are defined below.

Table 3-142 **RTRV-ATTR-ENV** Output Parameters

Parameter Name	Description
aid	Access Identifier. The *aid* identifies the environment point. Value: Input miscellaneous discrete AID. Default *aid* results in the description of all environmental points.
envmsg	Environment Message. This is the condition description to be associated with the addressed environmental point. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 26 characters. Must be included in quotes. Ex: “open door”
pfname	Profile Name. This indicates the ASAP profile that was assigned to this environmental point via the **SET-ATTR-ENV** command. The profile type is ENV. Value: See the **ENT-ASAP-PROF** command for the values of this parameter.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-ENV** command to retrieve the description of the third environmental point:

```
RTRV-ATTR-ENV:LT-WBM:misc_in3:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "misc_in3:,,\"smoke detector 3\":env_cr"
;
```

The following example shows a **RTRV-ATTR-ENV** command to retrieve the description of all the environmental points:

```
RTRV-ATTR-ENV:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "misc_in1:,,\"pump on\":env_na"
   "misc_in2:,,\"smoke detector 1\":env_cr"
   "misc_in3:,,\"smoke detector 2\":env_cr"
   "misc_in4:,,\"smoke detector 3\":env_cr"
   "misc_in5:,,\"smoke detector 4\":env_cr"
   "misc_in6:,,\"fan on\":env_na"
   "misc_in7:,,\"open door\":env_mn"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-ATTR-ENV** command.

RELATED TL1 MESSAGES

REPT ALM ENV

RTRV-ALM-ENV

SET-ATTR-ENV

NAME

RTRV-ATTR-MSG: Retrieve Attribute Message

The **RTRV-ATTR-MSG** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ATTR-MSG:*tid*::*ctag*;

DESCRIPTION

The **RTRV-ATTR-MSG** command retrieves the current state of the autonomous message reporting, which is controlled by the **ALW-MSG** and **INH-MSG** commands.

The **RTRV-ATTR-MSG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-143 **RTRV-ATTR-MSG** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

Table 3-144 **RTRV-ATTR-MSG** Output Parameters

Parameter Name	Description
msgstate	The current state of autonomous message reporting. Values: ■ ON ■ OFF.

EXAMPLE INPUT/OUTPUT

The following example shows a **RTRV-ATTR-MSG** command:

```
RTRV-ATTR-MSG:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "ON"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-ATTR-MSG** command.

RELATED TL1 MESSAGES

ALW-MSG

INH-MSG

RTRV-ATTR-ALM

NAME

RTRV-COND: Retrieve Condition

The **RTRV-COND** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-COND[*-modifier*]*:tid:*[*aid*]*:ctag::*[*condtype*],,,;

DESCRIPTION

Alarms can have notification codes of critical, major, minor, not alarmed, and not reported (CR, MJ, MN, NA, NR). If an alarm has a code CR, MJ, or MN, then it is retrieved by **RTRV-ALM**. If it has a notification code NA, then it is retrieved by **RTRV-COND**. If it is NR, then it can be reported by **RTRV-FLT-STATE**.

RTRV-COND is closely related to **REPT EVT** which autonomously reports when an alarm of notification code NA either sets or clears. **RTRV-COND** retrieves the **REPT EVT** events that are still set. Protection switching events that are reported by **REPT EVT** are not reported by **RTRV-COND** (for example, the lockout of a timing reference is not reported by **RTRV-COND**).

See the **RTRV-ALM** command for a more general discussion of alarms.

RTRV-COND command messages can be initiated by the user to retrieve all active alarms of level Not Alarmed (NA) from a network element.

In addition to reporting all **active** alarms of level NA previously reported by **REPT EVT**, **RTRV-COND** retrieves those reported by other autonomous messages.

Because only active NA alarms are retrieved, transients such as protection switch events are not retrieved.

The **RTRV-COND** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-145 **RTRV-COND** Input Parameters

Parameter Name	Description
modifier	This parameter is a message modifier to the command and may have the following value: ■ **ALL** — This requests all events. This is the default (equivalent to the value being omitted). Starting in Release 3, ***modifier*** might be able to have any of the values that are listed for the output parameter *aidtype*. If/when that happens, a series of requirements may need to be added here for T3, T1, EC1, …
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This is the address of the entity for which the current conditions are requested. For initial releases, the ***aid*** may not be specified. Starting with Release 3, ***aid*** may be specified. The ***aid*** value entered should be a valid ***aid*** for a given ***modifier***. See the AID table in OSEG Appendix A. Not only can an AID be specified for a physical entity such as a circuit pack or a port, it can also be specified for a protection group.
condtype	Condition Type. Value: ■ **ALL** — This requests all condition types. This is the default (equivalent to the value being omitted). Starting in Release 3, a value for ***condtype*** may be specified, for example, **LOS**. See OSEG Appendix A for details.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

The response to a valid **RTRV-COND** request is as follows:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:ntfcncde,condtype,srveff,ocrdat,ocrtm[,,,,\"conddescr\
"]"
   (0 or more lines of the above)
;
```

Applicable output lines are ordered by the value of occurrence date (*ocrdat*), and occurrence time (*ocrtm*), with the most recent listed first.

OUTPUT PARAMETERS

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

Table 3-146 **RTRV-COND** Output Parameters (Sheet 1 of 3)

Parameter Name	Description
aid	Access Identifier. This is the address of the equipment component or facility site ID for which an alarm condition is being reported. See the AID table in OSEG Appendix A.
aidtype	Access Identifier Type. It may have one of the following values: ■ COM — Common. An event that applies to the whole network element system; for example, a processing error. ■ EQPT — An equipment-related event. ■ E1 — A timing reference event at the E-1 level. ■ STM1 — A facility-related event for synchronous transport mode 1 (starting in Release 1). ■ STM1E — A facility-related event for synchronous transport mode 1, electrical (starting in Release 1).

Table 3-146 **RTRV-COND** Output Parameters (Sheet 2 of 3)

Parameter Name	Description
	■ STM4 — A facility-related event for synchronous transport mode 4 (starting in Release 2). ■ STM16 — A facility-related event for synchronous transport mode 16 (starting in Release 1). ■ STM64 — A facility-related event for synchronous transport mode 64 (starting in Release 1). ■ VC3 — A facility-related event for virtual container 3 (starting in Release 1). ■ VC4 — A facility-related event for virtual container 4 (starting in Release 1). ■ VC44C — A facility-related event for a concatenated VC signal (starting in Release 1). ■ VC416C — A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 2).
conddescr	Description Of The Condition. The general format is: ■ Category ■ Entity ■ Description ■ Additional text. If there is no additional text, then the trailing comma may be omitted. See OSEG Appendix A for details.
condtype	Condition Type. This is an identifier of the condition. See OSEG Appendix A for details.
ntfcncde	Notification Code. This is the alarm level, and the command output must have the value No Alarm (NA).
ocrdat	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
ocrtm	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
srveff	Service Affect. This is the affect on service and this command's output must have the value NSA (Not Service Affecting).

Table 3-146 **`RTRV-COND`** Output Parameters (Sheet 3 of 3)

Parameter Name	Description
thlev	Threshold Level (starting in Release 2). Only used for Threshold Crossing Alerts (TCAs). The threshold level value is set by **`ED-TCA-PROF`**. Threshold Crossing Alerts should not be confused with FM alarms/events which are reported by **`REPT ALM`** and **`REPT EVT`**. FM alarms/events have signal degrade and signal fail thresholds. These thresholds are set by **`ED-rr`**.
monval	Monitored (that is, measured) Value (starting in Release 2). Only used for TCAs. See OSEG Appendix A for details.
tmper	Time Period (starting in Release 2). Only used for TCAs. Values are: ■ 15 minutes ■ 1 day. See OSEG Appendix A for details.

EXAMPLE INPUT/OUTPUT

In the **`RTRV-COND`** response that follows, an STM16 LOS was reported from bay 1, shelf 1, slot 6.

```
RTRV-COND:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-06-1,STM16:NA,LOS,NSA,01-01,07-59-59,,,,\"Communica
tions, STM16 port, STM Loss Of Signal\""
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there also apply to the **`RTRV-COND`** command.

If a **RTRV-COND** command is received with an invalid input parameter, then the following error response is returned:

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

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT ALM

REPT ALM ENV

REPT EVT

RTRV-ALM

RTRV-ABN

RTRV-ALM-ENV

RTRV-FLT-STATE

RTRV-HDR

NAME

RTRV-CRS: Retrieve Cross Connection

The **RTRV-CRS** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

The syntax for Release 1.0 only is:

RTRV-CRS-*modifier*:*tid*:*in_aid*[,*out_aid*]:*ctag*[::*in_aid2*];

Starting in Release 2.0, the syntax is:

RTRV-CRS-*modifier*:*tid*:*in_aid*:*ctag*;

DESCRIPTION

The **RTRV-CRS** command can be initiated by the user to retrieve information on the existing cross connections in the network element.

The **RTRV-CRS** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-147 **RTRV-CRS** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the retrieve cross-connection command acts. Values: ■ **ALL** ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1) ■ **VC416C** (starting in Release 2).
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
in_aid	Input Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A). Ranging is allowed up the shelf level (1-1-#-#-ALL-ALL-ALL). Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
out_aid	Output Access Identifier. Value: logical tributary AID. Ranging is not allowed. Starting in Release 2.0, the ***out_aid*** input parameter will not be available.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
in_aid2	2nd Input Access Identifier. This parameter is applicable to path-protected cross connections only. The tributary specified via ***in_aid*** is the working leg and the tributary specified by ***in_aid2*** is the protection leg. Value: logical tributary AID. Ranging is not allowed.
in_aid2	Starting in Release 2.0, the ***in_aid2*** input parameter will not be available.

Table 3-147 RTRV-CRS Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ppgname	Path Protection Group Name (Starting in Release 3). This parameter can only be specified for path protection groups. If an input value is specified for ***ppgname*** and none is specified for ***in_aid,*** then **RTRV-CRS** operates on all protection groups that have the specified path protection group name. The command will complete successfully if there is no protection group described by ***aid***, ***ppgname***, but no data will be returned. Storage and retrieval of the ***ppgname*** is case sensitive, but actual use of the ***ppgname*** to determine the corresponding protection group is case insensitive. It is an alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes. The value of ***ppgname*** is set when **ENT-CRS** is used to establish the connections for the path protection group.

OUTPUT FORMAT

Starting with Release 1, the normal response is:

```
   sid date time
M  ctag COMPLD
   "in_aid,out_aid:rate:spec_block:state_block"
   .
   .
   .
   "in_aid,out_aid:rate:spec_block:state_block"
;
```

Starting with Release 1, if the *in_aid2* parameter is being reported, the normal response is:

```
   sid date time
M  ctag COMPLD
   "in_aid,out_aid:rate[,,in_aid2]:spec_block:state_block"
   .
   .
   .
   "in_aid,out_aid:rate[,,in_aid2]:spec_block:state_block"
;
```

No data line(s) are produced if there is no cross connection within the specified range of port(s).

OUTPUT PARAMETERS

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

Table 3-148 **RTRV-CRS** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
in_aid	Input Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A). Starting in Release 3.0, the value can also be a VCG tributary AID (See the AID table in OSEG Appendix A).
out_aid	Output Access Identifier. Value: logical tributary AID.
rate	Rate indicates the cross-connection rate. Values: ■ VC3 ■ VC4 ■ VC44C (starting in Release 1) ■ VC416C (starting in Release 2).

Table 3-148 **`RTRV-CRS`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
in_aid2	2nd Input Access Identifier. This parameter is applicable to adjunct and path-protected cross connections only. Value: logical tributary AID. The value reported by the output parameter *in_aid* is the same as specified by the input parameter ***in_aid***. The value reported by *in_aid2* is the AID of the other tributary input. If *in_aid* is the protection leg, then *in_aid2* is the working leg, and vice versa. The role of *in_aid* (working or protection) can be determined from *repleg*.
spec_block	See the following table for the *spec_block* parameters.
state_block	See the following table for the *state_block* parameters.

Table 3-149 **`RTRV-CRS`** Output *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
appg_aid	Adjunct Path Protection Group Access Identifier identifies associated path protection group. See the AID table in OSEG Appendix A. Values: logical AID.
loca	Identifies the ***tid*** associated with *in_aid* of node at which service is added to the BLSR. This parameter is omitted for non-BLSR connections. Values: See ***tid*** in the **`RTRV-HDR`** command. Starting in Release 2.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters will be allowed).
locz	Identifies the ***tid*** associated with *out_aid* of node at which service is dropped from the BLSR. This parameter is omitted for non-BLSR connections. Values: See *loca.*
lpbkstat	Indicates whether a cross-connect loopback exists on any of the input or the output tributaries of this cross connection. Values: ■ YES ■ NO.

Table 3-149 **RTRV-CRS** Output *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
omode	Retrieves the output mode for a 1-way cross connection or the source-to-destination direction of a 2-way cross connection. Values: ■ NORM ■ IDLE/UNEQ ■ AIS. Output mode IDLE is for DS3 tributaries and UNEQ mode is for tributaries from SONET/SDH interfaces.
repleg	Reported Leg-Pair. The reported leg-pair parameter is a composite of the atomic cross-connection topology, the leg status, and when supported, the path protection group working leg. Values: ■ 1WAY ■ 2WAY. ■ 1WAYPSW ■ 1WAYPSP. 1WAYPSW indicates 1-WAY Path Switched, Working. This implies *in_aid* is the working leg. A value of 1WAYPSP implies *in_aid* is the protection leg. Starting with Release 1.0, this parameter can also have values: ■ 1WAYPAW ■ 1WAYPAP.
rtnomode	Retrieves the output mode for the return direction (destination-to-source) of a 2-way cross connection. Values: ■ NORM ■ IDLE/UNEQ ■ AIS. Output mode IDLE is for DS3 tributaries and UNEQ mode is for tributaries from SONET/SDH interfaces.

Table 3-149 RTRV-CRS Output *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
sqfa	State of the squelch map entry for the node identified by *loca* (starting in Release 3). This parameter is omitted for non-BLSR connections. Values: ■ UNKNOWN ■ MVALID ■ MINVALID ■ AVALID ■ AINVALID ■ UOVERIDE.
sqfz	State of the squelch map entry for the node identified by *locz* (starting in Release 3). This parameter is omitted for non-BLSR connections. Values: ■ UNKNOWN ■ MVALID ■ MINVALID ■ AVALID ■ AINVALID ■ UOVERIDE.
xcappl	Application indicates one of the applications that are supported by compound cross-connection topologies. Values: 0-255 See **ENT-CRS** for suggested assignments.
rtnxcappl	Identifies the cross-connection application for the return direction (destination-to-source) of a 2-way cross connection. Values: See *xcappl.*
xcnum	Cross-Connection Number identifies each cross-connection leg in a specific compound cross connection. Any nine digit number is acceptable. Recommended format of the nine digits are allocated as follows (where the digit values pertain to *out_aid*): two digits for the bay, one digit for the shelf, two digits for the slot, one digit for the port, and three digits for the trib.The default value is 000000000. See **ENT-CRS** for details about how the slot digits are assigned.
rtnxcnum	Identifies the cross-connection number for the return direction (destination-to-source) of a 2-way cross connection. Values: See *xcnum.*

Table 3-150 **RTRV-CRS** Output *state_block* Parameters

Parameter Name	Description
pst	THIS IS CURRENTLY NOT USED. A comma (,) is placed in this field.

EXAMPLE INPUT/OUTPUT

The following examples show the successful completion of **RTRV-CRS** command by the network element. The following example retrieves the existing cross connections from the shelf specified by the AID. The output response shows a 1WAY non-BLSR cross connections:

```
RTRV-CRS-ALL:LT-WBM-789:1-1-#-#-all-all-all:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-O01-W-8-1-1,2-1-O01-W-1-1-1:VC3:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO,XCAPPL=60,XCNUM=011031001"
   "1-1-O02-W-6-1-1,2-1-O02-W-2-1-1:VC3:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO,XCAPPL=60,XCNUM=011111001"
   "2-1-O03-W-4-1-1,1-1-O03-W-3-1-1:VC3:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO,XCAPPL=60,XCNUM=011011001"
;
```

Examples are given in **ENT-CRS** for the following path protection group applications:

- Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Node Cross Connections
- Ring Interworking, Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE Cross Connections
- UPSR (or SNCP Ring) Add, Drop Cross Connections
- UPSR (or SNCP RIng), Single Node Interconnection, Same NE Cross Connections.

Those examples were of general nature - specific values for AIDs were not given. Rather than repeating those examples here, one particular example will be used as the basis for a specific example. This example will be for **UPSR (or SNCP Ring), Single Node Interconnection, Same NE Cross Connections**.

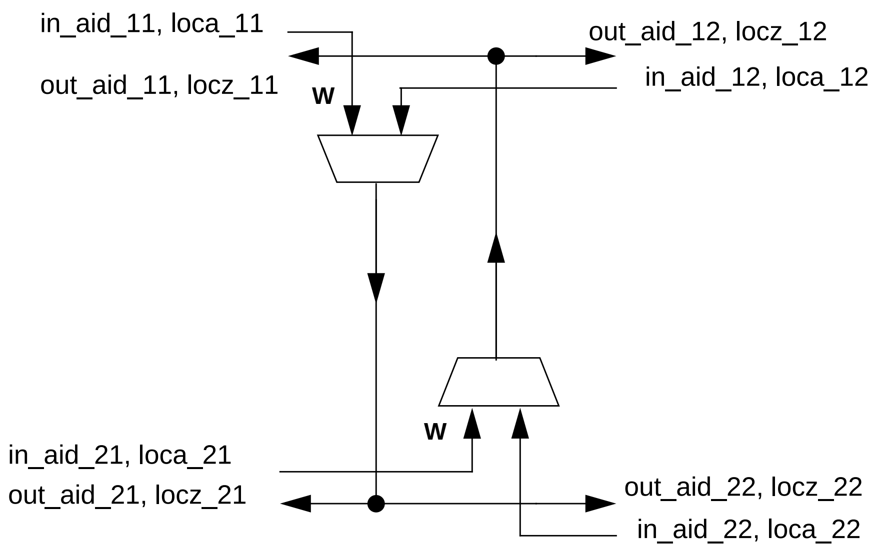


Table 3-151 UPSR (or SNCP Ring), Single Node Interconnection, Same NE

repleg	in_aid	out_aid	in_aid2	appg_aid
1WAYPSW	in_aid_11	out_aid_21	in_aid_12	
1WAYPAW	in_aid_11	out_aid_22	in_aid_12	out_aid_21
1WAYPSW	in_aid_21	out_aid_11	in_aid_22	
1WAYPAW	in_aid_21	out_aid_12	in_aid_22	out_aid_11
1WAYPSP	in_aid_12	out_aid_21	in_aid_11	
1WAYPAP	in_aid_12	out_aid_22	in_aid_11	out_aid_21
1WAYPSP	in_aid_22	out_aid_11	in_aid_21	
1WAYPAP	in_aid_22	out_aid_12	in_aid_21	out_aid_11

For the TL1 response to a **`RTRV-CRS`** command, the following AID values will be used:

- in_aid_11, out_aid_11: 1-1-u-#-2-1-4
- in_aid_12, out_aid_12: 1-1-u-#-10-1-4
- in_aid_21, out_aid_21: 1-1-u-#-4-1-4
- in_aid_22, out_aid_22: 1-1-u-#-12-1-4.

In the following example, the output lines are ordered for ease of understanding and do not necessarily represent the actual order of the output.

Note: the AIDs for the UPSR, Single Node Interconnection, Same NE Cross Connections were chosen to be on the same shelf so only one **RTRV-CRS** would be needed for this example.

```
RTRV-CRS-STS1:LT-WBM-789:1-1-u-#-ALL-ALL-ALL:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-2-1-4,1-1-u-#-4-1-4:STS1,,1-1-u-#-10-1-4:repleg=1WAYPSW
,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=21,xcnum=011031004,ppgna
me=\"main office\""
   "1-1-u-#-2-1-4,1-1-u-#-12-1-4:STS1,,1-1-u-#-10-1-4:repleg=1WAYPA
W,APPG_AID=1-1-u-#-4-1-4,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=
21,xcnum=011111004"
   "1-1-u-#-4-1-4,1-1-u-#-2-1-4:STS1,,1-1-u-#-12-1-4:repleg=1WAYPSW
,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=21,xcnum=011011004,ppgna
me=\"branch lab\""
   "1-1-u-#-4-1-4,1-1-u-#-10-1-4:STS1,,1-1-u-#-12-1-4:repleg=1WAYPA
W,APPG_AID=1-1-u-#-2-1-4,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=
21,xcnum=011091004"
   "1-1-u-#-10-1-4,1-1-u-#-4-1-4:STS1,,1-1-u-#-2-1-4:repleg=1WAYPSP
,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=21,xcnum=011031004,ppgna
me=\"main office\""
   "1-1-u-#-10-1-4,1-1-u-#-12-1-4:STS1,,1-1-u-#-2-1-4:repleg=1WAYPA
P,APPG_AID=1-1-u-#-4-1-4,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=
21,xcnum=011111004"
   "1-1-u-#-12-1-4,1-1-u-#-2-1-4:STS1,,1-1-u-#-4-1-4:repleg=1WAYPSP
,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=21,xcnum=011011004,ppgna
me=\"branch lab\""
   "1-1-u-#-12-1-4,1-1-u-#-10-1-4:STS1,,1-1-u-#-4-1-4:repleg=1WAYPA
P,APPG_AID=1-1-u-#-2-1-4,omode=NORM,lpbkstat=NO,taccstat=NO,xcappl=
21,xcnum=011091004"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there apply to the **RTRV-CRS** command.

RELATED TL1 MESSAGES

DLT-CRS

ENT-CRS

RTRV-LPBK

NAME

RTRV-EPM: Retrieve Ethernet Performance Monitoring

The **RTRV-EPM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-EPM-*modifier*:*tid*:*aid*:*ctag*::[*emontype*],[*monlev*],*tmper*,[*mondat*],[*montm*];

DESCRIPTION

The **RTRV-EPM** command retrieves the Ethernet performance monitoring data.

The **RTRV-EPM** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-152 **RTRV-EPM** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier. This parameter is available starting in Release 4. Value(s): ■ **ENET**
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.

Table 3-152 **`RTRV-EPM`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 4. Value: Ethernet port AID or a VCG AID. See the AID table in OSEG Appendix A. An “all” AID range is supported at the pack, shelf, or system level.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
emontype	This is the monitored parameter type for which data is requested. If the value is omitted, this parameter defaults to **`ALL`**. This parameter is available starting in Release 4. Values: ■ **EDFE** Dropped frames-errors ■ **EINB** Incoming number of Megabytes (10^6 bytes) ■ **EONB** Outgoing number of Megabytes (10^6 bytes) ■ **ALL** All of the above monitored types.
monlev	The level for the monitored parameter. This parameter is available starting in Release 4. Values: ■ **1**-**UP** Only nonzero data will be reported. ■ **0**-**UP** Zero and all positive data will be reported.
tmper	Time period. This parameter is available starting in Release 4. Values: ■ **15-MIN** ■ **1-DAY**.
mondat	Monitored date. This parameter is available starting in Release 4. See the description of the ***mondat*** parameter in the **`RTRV-PM`** command.
montm	Monitored time. This parameter is available starting in Release 4. See the description of the ***montm*** parameter in the **`RTRV-PM`** command.

OUTPUT FORMAT

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

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:emontype,monval,[validity],[tca],tmper,[mondat],[montm]"
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **RTRV-EPM** command.

Table 3-153 **RTRV-EPM** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 4. Value: Ethernet port AID or VCG AID. See the AID table in OSEG Appendix A.
aidtype	AID Type. This parameter is available starting in Release 4. Value(s): ■ ENET
emontype	Monitored Parameter Type. This parameter is available starting in Release 4.
monval	Monitored Value. This contains the measured value of the parameter specified in *emontype*. This parameter is available starting in Release 4.
validity	This indicates the validity of the PM data. This parameter is available starting in Release 4. See the *validity* parameter in the **OUTPUT PARAMETERS** section of **RTRV-PM** for the values of this parameter.

Table 3-153 **RTRV-EPM** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
tca	Threshold Crossing Alert. Indicates if threshold has been exceeded. This parameter is available starting in Release 4. Value(s): ■ TCA. If the value is omitted, it indicates the data is below the threshold level for that parameter.
tmper	Time Period. This parameter is available starting in Release 4. Values: ■ 15-MIN ■ 1-DAY.
mondat	Monitored date. This parameter is available starting in Release 4. See the description of the *mondat* parameter in the **RTRV-PM** command.
montm	Monitored time. This parameter is available starting in Release 4. See the description of the *montm* parameter in the **RTRV-PM** command.

EXAMPLE INPUT/OUTPUT

ERROR RESPONSES

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

RELATED TL1 MESSAGES

RTRV-PM

NAME

RTRV-EPORT: Retrieve Ethernet Port

The **RTRV-EPORT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-EPORT-*modifier*:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-EPORT** command retrieves the attributes of one or more Ethernet ports.

INPUT PARAMETERS

Table 3-154 RTRV-EPORT Input Parameters

Parameter Name	Description
modifier	Modifier. This parameter is available starting in Release 3. Value(s): ■ **1GE**.
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 3. Value: Ethernet port AID. See the AID table in OSEG Appendix A. An “all” AID range is supported at the pack or shelf level.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

```
   sid date time
M  ctag COMPLD
   "aid,modifier::spec_block"
    <1 or more of the line above>
   "aid,modifier:vvlan,VLAN"
    <1 or more of the line above, for another vvlan>
    <1 or more of this entire block, for another aid>
;
```

If there is more than one VLAN per AID, then the output lines will be ordered in ascending order. That is, for the same AID, each subsequent output line will have a *vvlan* which is greater than the preceding line.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **RTRV-EPORT** command.

Table 3-155 **RTRV-EPORT** Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 3. Value: Ethernet port AID. See the AID table in OSEG Appendix A.
modifier	Modifier. This parameter is available starting in Release 3. Value(s): ■ 1GE.
vvlan	Valid VLAN. This parameter is available starting in Release 3. The valid VLAN is used to indicate the tagged frames that are present at the ingress of the LAN port. Values: An integer in the range 1-4093. The initial value is an empty list, which results in that line being omitted.
spec_block	See the following table for all *spec_block* parameters.

Table 3-156 RTRV-EPORT *spec_block* **Output Parameters (Sheet 1 of 2)**

Parameter Name	Description
dftpri	Default Priority. This parameter is available starting in Release 3. Values: ■ NA (initial value) ■ HIGH ■ LOW.
dftvlan	Default VLAN Identifier. This parameter is available starting in Release 3. Value: An integer in the range 1-4093, or 0. A 0 value means that the user does not want a default value to be set.
enetpn	Ethernet Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
epmode	Ethernet Port Monitoring Mode. This parameter is available starting in Release 3. Values: ■ MON ■ NMON ■ AUTO (initial value).
eppm	Ethernet Port PM Enable. This parameter is available starting in Release 3. Values: ■ ENABLE ■ DISABLE (initial value).
fcmd	Flow Control Mode. Values: ■ DISABLE ■ AUTO (initial value).

Table 3-156 **RTRV-EPORT** *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
rptmode	Repeater Mode. (Promiscuous mode) This parameter is available starting in Release 4. Values: ■ ENABLE ■ DISABLE (initial value)
fcmdo	Flow Control Mode Operation. This parameter is omitted if the circuit pack is not present. This parameter is available starting in Release 3. Values: ■ ENABLE — Enable both transmit and receive ■ DISABLE — Discable both transmit and receive ■ ENXDISR — Enable transmit, disable receive ■ DISXENR — Disable transmit, enable receive ■ UNAVAILABLE.
macaddr	MAC Address. If the MAC address has not been set, this parameter will be omitted. This parameter is available starting in Release 3. Value: 6 octets expressed as 12 hexadecimal characters.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-EPORT** command by the network element:

```
RTRV-EPORT-1GE:LT-WBM:1-1-#-#-01-1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-01-1,1GE::epmode=NMON,enetpn=asap123,eppm=ENABLE"
   "1-1-#-#-01-1,1GE::enettca=tca123,fcmd=AUTO,fcmdo=ENABLE"
   "1-1-#-#-01-1,1GE::dftvlan=012,dftpri=NA,macaddr=123456789ABC"
   "1-1-#-#-01-1,1GE:123,VLAN"
   "1-1-#-#-01-1,1GE:124,VLAN"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ED-EPORT

ED-VCG

ED-VCGTRIB

RTRV-VCG

RTRV-VCGTRIB

RTRV-VLAN

NAME

RTRV-EQPT: Retrieve Equipment

The **RTRV-EQPT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1 and P1

Beginning with Release 2.0, the user privilege code is:
User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-EQPT:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-EQPT** command retrieves the provisioning information associated with equipment.

The **RTRV-EQPT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-157 **RTRV-EQPT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. Value: ■ system AID ■ bay AID The keyword “all” is allowed.

Table 3-157 **RTRV-EQPT** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ shelf AID — The keyword “all” is allowed. ■ slot AID — The keyword “all” is allowed. ■ circuit pack AID — The keyword “all” is allowed.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

In response to a valid **RTRV-EQPT** command, the following output report is returned:

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

If the input AID is a controller complex AID, then the output format will be the following:

```
   sid date time
M  ctag COMPLD
   "<controller complex AID>"
   "<circuit pack AID>:name=x,qual=x"
   ...
   "<circuit pack AID>:name=x,qual=x"
;
```

OUTPUT PARAMETERS

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

Table 3-158 **`RTRV-EQPT`** Output Parameters

Parameter Name	Description
aid	Access Identifier of equipment being reported. See the AID table in OSEG Appendix A.
spec_block	See the following table for all *spec_block* parameters.

Table 3-159 **`RTRV-EQPT`** *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
actlname	Acceptable Circuit Pack Name (reported for a slot AID). This parameter is available starting in Release 1. This parameter is reported on a line by itself together with *actlqual*. The line is repeated for all the acceptable circuit packs in the slot. See **`ENT-EQPT`** command for the values of circuit pack names.
actlqual	Acceptable Circuit Pack Qualifier (reported for a slot AID). This parameter is available starting in Release 1. This parameter is reported on a line by itself together with actl-name. The line is repeated for all the acceptable circuit packs in the slot. See **`ENT-EQPT`** command for the values of circuit pack qualifiers.
app	Apparatus Code, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of *holdst* is VALID. This uniquely identifies the specific function provided by the circuit pack. This parameter is an alphanu-meric string of up to 9 characters.
clei	Common Language Equipment, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of *holdst* is VALID. This parameter is a 10-char-acter alphanumeric code.

Table 3-159 **`RTRV-EQPT`** *spec_block* Output Parameters (Sheet 2 of 3)

Parameter Name	Description
eqptpn	Equipment ASAP Profile Name. This parameter is available starting in Release 3. This parameter is an alphanumerical string with a maximum of 24 characters. Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default (initial value). This parameter is reported for a shelf AID. This parameter is reported for a slot AID. This parameter is reported for a circuit pack AID.
name	Circuit Pack Name, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of *holdst* is VALID. It is also reported when the input ***aid*** is a controller complex AID; the output will list this parameter for each of the circuit packs in the controller complex. See **`ENT-EQPT`** command for the values of circuit pack names. The value EXT is used for the extra slots used up by a double-width circuit pack.
nvmname	Circuit Pack Name, as stored in the system NVM database. This parameter is available starting in Release 1. This parameter is reported for a slot AID. See **`ENT-EQPT`** command for the values of circuit pack names. The value EXT is used for the extra slots used up by a double-width circuit pack.
nvmqual	Circuit Pack Qualifier, as stored in the system NVM database. This parameter is available starting in Release 1. This parameter is reported for a slot AID. See **`ENT-EQPT`** command for the values of circuit pack qualifiers. The value EXT is used for the extra slots used up by a double-width circuit pack.
oncpi	ON Cable Pair Identifier. This parameter is available starting in Release 1. This parameter is reported for an electrically connected I/O shelf AID. Values: 1-4.

Table 3-159 `RTRV-EQPT` *spec_block* Output Parameters (Sheet 3 of 3)

Parameter Name	Description
qual	Circuit Pack Qualifier, as stored in the EEPROM on the circuit pack, if the value of *holdst* is VALID. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID. It is also reported when the input ***aid*** is a controller complex AID; the output will list this parameter for each of the circuit packs in the controller complex. See **`ENT-EQPT`** command for the values of circuit pack qualifiers. The value EXT is used for the extra slots used up by a double-width circuit pack.
shlftp	Shelf Type. This parameter is available starting in Release 1. This parameter is only allowed with a shelf AID. Values: ■ MAIN ■ TYPE2GIO ■ TYPE10GIO.
sln	Serial Number, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of *holdst* is VALID. This parameter is either a 12- or a 25-character alphanumeric code uniquely identifying each circuit pack and indicating the date and place of manufacture.
ssn	Series Number, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of *holdst* is VALID. This parameter is a code between 4 to 6 characters, with format Sn-n**, where n is a numeric digit and "**" means two optional suffix characters. For example, S1-1 or S1-1M. Note that the series number normally includes a colon (:). Since the colon is used as a TL1 field separator, a dash (-) is used instead by TL1.
systype	System Type. This parameter is available starting in Release 1. Specifies the type of system. This parameter is only reported for a system AID. Refer to the **`ACT-USER`** command for a list of values of this parameter.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-EQPT** command:

```
RTRV-EQPT:LT-WBM:system:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "system:syspn=def,swsize=4608"
;
```

The following example shows a retrieval with a bay AID range:

```
RTRV-EQPT:LT-WBM:all:123456;

   LT-WBM 01-08-15 08:01:00
M  123456 COMPLD
   "sc"
   "1"
;
```

ERROR RESPONSES

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

The **INPUT, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response:

- Entity does not exist.

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ED-STATE-EQPT

ENT-EQPT

RTRV-STATE-EQPT

NAME

RTRV-EXT-CONT: Retrieve External Control

The **RTRV-EXT-CONT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-EXT-CONT:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-EXT-CONT** command instructs an NE to send the control state of (an) external control(s). The command can be used to audit the result of an **OPR-EXT-CONT** or a **RLS-EXT-CONT** command.

The **RTRV-EXT-CONT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-160 **RTRV-EXT-CONT** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. The ***aid*** identifies the external miscellaneous discrete control for which the state is being retrieved. Values: (See the AID table in OSEG Appendix A.) Values: Input miscellaneous discrete AID. Default ***aid*** retrieves information for all discrete controls
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element fully complies with the **RTRV-EXT-CONT** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid:,dur,contstate"
   ...
   "aid:,dur,contstate"
;
```

OUTPUT PARAMETERS

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

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command. Parameters that specifically apply to the **RTRV-EXT-CONT** command are defined below.

Table 3-161 **RTRV-EXT-CONT** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	The *aid* identifies the external control for which the current control states are being retrieved. When the default *aid* is used, the output is sorted by *aid*, with output miscellaneous discrete AID 1 and its description printed first and output miscellaneous discrete AID 2 second, etc.
dur	The duration for which the external control can be operated. Values: ■ CONTS ■ MNTRY.

Table 3-161 `RTRV-EXT-CONT` Output Parameters (Sheet 2 of 2)

Parameter Name	Description
contstate	The control state of the external control. Valid values for *contstate* are as follows: ■ OPER — Operated ■ RLS — Released. When *dur* is MNTRY, the *contstate* reflects the state of the output in case the MNTRY state is not active.

EXAMPLE INPUT/OUTPUT

The following example shows a **`RTRV-EXT-CONT`** command that retrieves the control state of external miscellaneous discrete control 3:

```
RTRV-EXT-CONT:LT-WBM:misc_out3:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "misc_out3:,CONTS,RLS"
;
```

The following example shows a **`RTRV-EXT-CONT`** command that retrieves the control state of all eight external miscellaneous discrete controls:

```
RTRV-EXT-CONT:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "misc_out1:,CONTS,RLS"
   "misc_out2:,CONTS,OPER"
   "misc_out3:,MNTRY,OPER"
   "misc_out4:,MNTRY,RLS"
   "misc_out5:,CONTS,RLS"
   "misc_out6:,CONTS,OPER"
   "misc_out7:,CONTS,RLS"
   "misc_out8:,CONTS,RLS"
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there also apply to the **`RTRV-EXT-CONT`** command.

RELATED TL1 MESSAGES

`OPR-EXT-CONT`

`RLS-EXT-CONT`

NAME

RTRV-FECOM-LAN: Retrieve Far-End Communications for LAN

The **RTRV-FECOM-LAN** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-FECOM-LAN:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-FECOM-LAN** command can be initiated by users to retrieve the provisioned state of the IAO-LAN interface.

The **RTRV-FECOM-LAN** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-162 **RTRV-FECOM-LAN** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 1. This identifies the LAN circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element fully complies with the **RTRV-FECOM-LAN** request, the following normal system response is returned:

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

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for the **RTRV-HDR** command. Additional parameters that apply specifically to the **RTRV-FECOM-LAN** command response are defined in the following table.

Table 3-163 **RTRV-FECOM-LAN** Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 1. This identifies the LAN circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
spec_block	See the following table for all *spec_block* parameters.

Table 3-164 **RTRV-FECOM-LAN** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
extllm	External LAN Max Link Metric. This parameter is available starting in Release 2.1. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63. The initial value is 14. Starting from Release 4.0 this papramater is no longer supported.

Table 3-164 **RTRV-FECOM-LAN** *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
extltss	External LAN TARP Storm Suppression. This parameter is available starting in Release 4. Values: ■ ENABLE ■ DISABLE (initial value).
intlanstat	This parameter is available starting in Release 2.1. This parameter indicates whether communication over the internal LAN channel is enabled or disabled. Values: ■ ENABLE ■ DISABLE.
intllm	Internal LAN Max Link Metric. This parameter is available starting in Release 2.1. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63. The initial value is 14. Starting from Release 4.0 this paprameter is no longer supported.
lanrpri	LAN Designated Router Priority. This parameter is available starting in Release 2.1. If the channel is associated with an active LAN port, this parameter sets the relative priority for the node in the election of a designated router on the LAN. There is a separate election for each separate LAN (IAO LAN or ON-LAN) to which the node is connected. Values: 1 - 127. The initial value is 64.
lanstat	This parameter is available starting in Release 1. This parameter indicates whether communication over the external IAO-LAN channel is enabled or disabled. Values: ■ ENABLE ■ DISABLE.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-FECOM-LAN** command:

```
RTRV-FECOM-LAN:LT-WBM:1-1-#-#-dccei-cp:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dccei-cp:lanstat=enable"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-FECOM-LAN** command.

RELATED TL1 MESSAGES

ENT-FECOM-LAN

NAME

RTRV-FECOM: Retrieve Far-End Communications

The **RTRV-FECOM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

Beginning with Release 2.0, the user privilege code is:
User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

Beginning in Release 1, the syntax is:

RTRV-FECOM:*tid*:*aid*:*ctag*::[*port*],[*dcctype*];

DESCRIPTION

The **RTRV-FECOM** command can be initiated by users to retrieve the provisioned state of the network element Data Communication Channel (DCC) of the specified DCC circuit pack.

The **RTRV-FECOM** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-165 **RTRV-FECOM** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-165 `RTRV-FECOM` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 1. This identifies the DCC circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
port	This parameter is available starting in Release 1. This parameter indicates the optical (OC-N) port AID that would be using a channel of the DCC circuit pack for far-end communications. If this field is omitted, the report will display the status of all optical ports associated with the DCC circuit pack. Value: optical port AID.
dcctype	This parameter is available starting in Release 1. This parameter specifies whether the values displayed in the ***spec_block*** refer to the Line or Section DCC. If this parameter is omitted, any DCCs that are active appear in the output (either Line or Section or both). Values: ■ **SECTION** ■ **LINE**.

OUTPUT FORMAT

Beginning with Release 1, if the network element fully complies with the **`RTRV-FECOM`** request, the following response is returned:

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

OUTPUT PARAMETERS

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

Table 3-166 **`RTRV-FECOM`** Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 1. This identifies the DCC circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
port	This parameter is available starting in Release 1. This parameter indicates the optical (OC-N) port AID that would be using a channel of the DCC circuit pack for far-end communications. Value: optical port AID.
dcctype	This parameter is available starting in Release 1. This parameter specifies whether the values displayed in the *spec_block* refer to the Line or Section DCC. Values: ■ SECTION ■ LINE.
spec_block	See the following table for all *spec_block* parameters.

Table 3-167 **`RTRV-FECOM`** *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
chanstat	This parameter is available starting in Release 2.1. This parameter indicates the operational state of the DCC channel specified by *dcctype*. This parameter is only reported for enabled DCC channels. Values: ■ UNEQUIPPED — The circuit pack containing the port is not inserted in the slot. ■ GOOD — Currently selected and good. ■ FAILED — Currently selected but failed. ■ UNKNOWN — Port is not selected (standby) or DCCEI circuit pack is unequipped/failed.

Table 3-167 `RTRV-FECOM` *spec_block* Output Parameters (Sheet 2 of 3)

Parameter Name	Description
dccprottp	This parameter is available starting in Release 2.1. This parameter reports the protection type of the DCC channel. Values: ■ 0X1 Unprotected ■ 1X1 1-by-1 bidirectional revertive ■ 1XN 1-by-N bidirectional revertive ■ 1+1_UNI 1-plus-1 unidirectional non-revertive ■ 1+1_BIR 1-plus-1 bidirectional revertive ■ 1+1_BINR 1-plus-1 bidirectional non-revertive.
dccstat	This parameter is available starting in Release 1. This parameter indicates whether communication over the DCC channel is enabled or disabled. Values: ■ ENABLE ■ DISABLE.
l2if	This parameter is available starting in Release 3. This parameter sets the LAPD transmission window parameter, K. K corresponds to the maximum number of outstanding information frames allowed before expecting an acknowledgment. Values: 1 - 127 in increments of 1. The initial value is 7. Staring Release 4.0 this parameter is no longer supported.
l2rex	This parameter is available starting in Release 3. This parameter sets the LAPD maximum number of retransmissions, N200, allowed. Values: 1 - 16 in increments of 1. The initial value is 3. Starting with Release 3, this parameter is available for the Section DCC. Starting with Release 3, this parameter is available for the Line DCC. Staring Release 4.0 this parameter is no longer supported.
l2wait	This parameter is available starting in Release 3. This parameter indicates the LAPD retransmission timer,T200. When this timer expires, retransmission of the frame is initiated. Values: 0.2-25 seconds in 100 msec increments. The initial value is 1 second.

Table 3-167 **`RTRV-FECOM`** *spec_block* Output Parameters (Sheet 3 of 3)

Parameter Name	Description
	Starting with Release 3, this parameter is available for the Section DCC. Starting with Release 3, this parameter is available for the Line DCC. Staring Release 4.0 this parameter is no longer supported.
l3mlm	Max Link Metric. This parameter is available starting in Release 2.1. This is the maximum value of a routing metric assignable to a circuit. Values: 1 - 63. The initial value is 20. Starting with Release 2.1, this parameter is available for the Section DCC. Starting with Release 2.1, this parameter is available for the Line DCC. Starting in Release 3.0 the parameter l3mlm is no longer supported
lapdmode	LAPD Mode. This parameter is available starting in Release 4. This parameter provisions the data link service. Values: ■ AITS ■ UITS (initial value). ■ AUTO.
lapdrl	This parameter is available starting in Release 1. This parameter indicates the LAPD Role of the DCC channel. When the value is the same on both ends, an alarm will be active. Values: ■ USER-SIDE ■ NETWORK-SIDE. Starting with Release 1, this parameter is available for the Section DCC. Starting with Release 1, this parameter is available for the Line DCC.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-FECOM** command:

```
RTRV-FECOM:LT-WBM:1-1-#-#-dccei-cp:123456::1-1-#-#-04-1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dccei-cp,1-1-f09-ew-04-1,LINE:dccstat=ENABLE,lapdrl=USER-
SIDE"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ENT-FECOM

NAME

`RTRV-FLT-STATE:` Retrieve Fault State

The **`RTRV-FLT-STATE`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

`RTRV-FLT-STATE``:`*`tid`*`:`*`aid`*`:`*`ctag`*`::[`*`tribcat`*`];`

DESCRIPTION

`RTRV-FLT-STATE` retrieves fault information for ports or tributaries. If one or more faults is declared for the specified location, then those faults are reported even if their notification code indicates No Report (NR).

Fault information can be retrieved for two types of tributaries: logical (virtual) tributaries and physical tributaries. The difference between a logical and physical tributary will be explained via two OC3 ports identified as port1 and port2.

Port1 has three physical tributaries: trib1, trib2, trib3, and similarly port 2 has three physical tributaries. Physical trib3 of port1 might have an LOS while physical trib3 of port2 might have no LOS. Note that physical tributaries are not dependent on whether or not the tributaries belong to a protection group.

In addition to physical tributaries which exist whether or not there is a protection group, if the ports belong to a protection group, then the protection group also has logical tributaries. By definition, to determine the fault information of a logical tributary, the network element refers to the *active* physical tributary of the protection group. If port2 is the active member of the protection group, then the alarm information for logical trib3 is determined from physical trib3 of port2. For the previous example, logical trib3 has no LOS.

`RTRV-ALM` also retrieves fault information for ports and tributaries; however, it does not retrieve any information for events that have a notification code of NR.

For a general description of alarms, see **`RTRV-ALM.`**

The **RTRV-FLT-STATE** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-168 **RTRV-FLT-STATE** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier of the port or tributary for which the information is being reported. The value can be either a port AID or a tributary AID. See the AID table in OSEG Appendix A. If a tributary is not part of a protection group, then a logical tributary is the same as the port tributary.
tribcat	Category Of Tributary. Values: ■ **LOGICAL** Logical tributary (default value) ■ **PHYSICAL** Physical tributary. If ***aid*** is specified as a tributary AID, either logical or physical, then a value must be specified for ***tribcat***. If ***aid*** is specified as a port AID, then a value must not be specified for ***tribcat***.

OUTPUT FORMAT

If the network element fully complies with the **RTRV-FLT-STATE** command, then the following response is returned:

```
   sid date time
M  ctag COMPLD
   "aid[,aidtype]:[tribcat],condtype"
   (0 or more lines of the above)
;
```

OUTPUT PARAMETERS

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

Table 3-169 RTRV-FLT-STATE Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier of the port or tributary for which the information is being reported. The general format of the AID is: port AID or trib AID. See the AID table in OSEG Appendix A.
aidtype	Access Identifier Type. One of the following values: If the *aidtype* is not listed below, e.g. *aidtype* of STS1 is not listed, then the *aidtype* field will not be shown in the output ■ STM1 — A facility-related event for synchronous transport mode 1 (starting in Release 1). ■ STM1E — A facility-related event for synchronous transport mode 1, electrical (starting in Release 1). ■ STM4 — A facility-related event for synchronous transport mode 4 (starting in Release 2.1). ■ STM16 — A facility-related event for synchronous transport mode 16 (starting in Release 1). ■ STM64 — A facility-related event for synchronous transport mode 64 (starting in Release 1). ■ VC3 — A facility-related event for virtual container 3 (starting in Release 1). ■ VC4 — A facility-related event for virtual container 4 (starting in Release 1). ■ VC44C — A facility-related event for a concatenated VC signal (starting in Release 1).

Table 3-169 **`RTRV-FLT-STATE`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ VC416C — A facility-related event for a concatenated VC signal (starting in Release 2.1).
tribcat	Category Of Tributary. Values: ■ LOGICAL — Logical tributary ■ PHYSICAL — Physical tributary. If the tributary does not belong to a protection group, then this field may be omitted. This field is omitted if a port is given as the AID.
condtype	Condition Type. This parameter identifies the type of alarm indication being reported. See the condition type table in OSEG Appendix A.

EXAMPLE INPUT/OUTPUT

The following examples contain simplified condition descriptors; actual condition descriptors may contain additional information.

The following example retrieves fault information for bay 1, shelf 1, slot 1, port 3:

```
RTRV-FLT-STATE:LT-WBM:1-1-#-#-01-3:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-01-3,OC48:,LOS,
;
```

For the following example, assume there is a 1+1 optical protection group with AIDs:

- working: 1-1-o23-w-04-1-2
- protection: 1-1-o23-p-05-1-2.

Since ***tribcat*** is specified as LOGICAL in this example, the working AID must be specified in the input (or else the command will be DENY'd).

```
RTRV-FLT-STATE:LT-WBM:1-1-#-#-04-1-2:123456::LOGICAL;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-o23-w-04-1-2,STS1:LOGICAL,T-BERP"
   "1-1-o23-w-04-1-2,STS1:LOGICAL,AIS-P"
;
```

By definition of a logical tributary, the output AID must be for the working tributary. This does not imply the working tributary was the active unit. If the protection tributary (1-1-o23-p-05-1-2) were active, the alarms would be determined by referring to that port, but the alarms would be indicated to apply to the working tributary (1-1-o23-w-04-1-2) because that is the logical tributary.

To determine what alarms, if any, are on the protection tributary, ***tribcat*** could be specified as PHYSICAL as in the following example:

```
RTRV-FLT-STATE:LT-WBM:1-1-o23-p-05-1-2:123456::PHYSICAL;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-o23-p-05-1-2,STS1:PHYSICAL,LOS"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **RTRV-FLT-STATE** command.

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

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

The following list identifies conditions that will cause an IDNV error response:

- ***aid*** specified as a tributary AID, but no value is specified for ***tribcat***.

- ***aid*** specified as a port AID, and a value is specified for ***tribcat***.

RELATED TL1 MESSAGES

RTRV-ALM

NAME

RTRV-HDR: Retrieve Header

The **RTRV-HDR** TL1 command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): Any

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

The **RTRV-HDR** command can be initiated by a user to request that the network element return a normal completion response.

In TL1 terminology, a ***parameter block*** always follows a colon ‘:’. Any trailing colons at the end of a command line may be omitted if they do not contain any parameters.

A parameter block can be either a block of position-defined parameters or it can be a ***spec_block*** (a block of name-defined parameters).

In a block of position-defined parameters, the parameter values are supplied at predefined positions within the parameter block. Two parameter values are separated by a comma. If the default value for a parameter is to be used, a null value is placed in the command line and the position of the parameter is maintained by keeping the comma. When default values are used for parameters at the end of the parameter block, it is not necessary to include all the trailing commas.

In all the TL1 command pages, for position-defined parameter blocks, simplified notation such as:
`[d],[e],[f],[g]`
is used to represent the following format:
`[d][,[e][,[f][,g]]]`
The following notation is also equivalent:
`[d],[e],[f][,g]`

In a specification block (*spec_block*), every parameter name is followed by an equal sign and the parameter value. The command line does not have to use all of the *spec_block* parameters. Also, *spec_block* parameters can appear in any order.

The word **NULL** is used for some of the parameter values in TL1 messages. For both input and output parameters, **NULL** means that the parameter is omitted.

TL1 messages use YY-MM-DD for the format of a date, meaning that the year only has two digits. This is consistent with Telcordia requirements. Internally, however, the system does use a 4-digit year. When the year appears in a response, the internal 4-digit year is truncated to two digits. When the year appears as an input parameter, for example in the **ED-DAT** command, years in the range 90-99 will represent 1990-1999, and years in the range 00-37 will represent 2000-2037.

Some string-valued parameters, like NENAME, allow any printable character within the double-quoted string (""). On output (**RTRV** and **REPT DBCHG**), the string is surrounded by escaped quotes \"\". Those parameters can contain any printable characters, including the TL1 parse characters (; : , "). Spaces and upper/lowercase are also preserved. Using two double-quotes "" will set the parameter to an empty string. But according to GR-831, within a quoted string, a double-quote character is escaped as \" and the backslash is escaped as \\. Within a backslash-quoted string (\"\"), the double-quote character is escaped as "" and the backslash is escaped as \\. Another caveat is that while that parameter can contain any printable character, in networks using a Telcordia OS, the TL1 parse characters (; : , ") should not be used. Particularly, the semicolon (;), less-than (<), and greater-than (>) characters must not be used in the string. (Reference: SR-1665 section 5.5.6.2)

The **RTRV-HDR** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-170 **RTRV-HDR** Input Parameters

Parameter Name	Description
tid	Target Identifier. This is the currently active name of the network element to which the command is addressed. The ***tid*** 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”. The ***tid*** can contain segments separated by hyphens (“-”), but each segment must begin with a letter. Beginning with Release 1, the slash character ‘/’ is allowed in the ***tid*** as a segment separator, like the ‘-’; i.e., as a separator between segments where each segment must begin with a letter. However, if you are using a Telcordia operations system, the only characters allowed in the TID are alphanumeric characters and hyphens(“-”), according to GR-831-CORE. Beginning with Release 2.1, the following characters are allowed in the TID: alphanumeric characters, underscore (“_”), and all the special characters allowed in the pid (password) parameter that are listed in OSEG Appendix A. There are no ordering constraints; the characters can appear in any order.
ctag	Correlation Tag. This is included in the command by the TL1 user and is repeated by the network element in the response to allow the TL1 user to associate the command and response messages. Valid values for ***ctag*** 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 “.”).

OUTPUT FORMAT

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

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

Where the following notation conventions apply:

Table 3-171 Notation Conventions

Notation	Description
<cr>	A carriage return in ASCII.
<lf>	A line feed in ASCII.
<>	The brackets are used to enclose one or more information items, e.g., <date>, <time>, <source identifier>, etc. The brackets are not transmitted.
^	The character ^ indicates a blank that must appear in the message.

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

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

Where the following notation conventions apply:

Table 3-172 Notation Conventions

Notation	Description
<cr>	A carriage return in ASCII.
<lf>	A line feed in ASCII.
<>	The brackets are used to enclose one or more information items, e.g., <date>, <time>, <source identifier>, etc. The brackets are not transmitted.
^	The character ^ indicates a blank that must appear in the message.

For commands that generate output, if the output response is less than or equal to 4096 bytes, the response will be terminated by the *semicolon* (;) character.

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

If an output response is partitioned into multiple responses, an IP acknowledgment will be sent between the continuation responses if the delay between continuation responses is greater than 2 seconds.

OUTPUT PARAMETERS

Table 3-173 **RTRV-HDR** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
sid	Source Identifier. This is the currently active name of the network element to which the command is addressed.
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).
M	This indicates the output message is generated in response to a manual command.

Table 3-173 **RTRV-HDR** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. This is included in the command by the TL1 user and is repeated by the network element in the response to allow the TL1 user to associate the command and response messages.
IP	In Progress. IP is sent in response to all commands with the exception of commands that result in error code output.
RL	Repeat Later. The requested command cannot be executed due to unavailable system resources. The command may be entered again later.
COMPLD	This is the completion code. It indicates that the command has been completed successfully.

If a parameter has a current value, and a provisioning command attempts to reprovision the parameter with a value that is the same as its current value, the command will return a COMPLD completion code.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-HDR** command:

```
RTRV-HDR:LT-WBM::123456;
IP 123456
<

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

The following error conditions are not unique to the **RTRV-HDR** command but may apply to any TL1 command.

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

The ***sid*** value in the error responses is that of the addressed network element. This is true even if a TL1-GNE sends an error message on behalf of an RNE.

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

If the TL1-GNE forwards a command to a remote network element and a communication failure occurs before the remote network element is able to respond, it is understood that no response may be returned.

The general format for simple error responses is as follows:

```
<cr><lf><lf>
   sid date time<cr><lf>
M  ctag^DENY<cr><lf>
   <error code><cr><lf>
   /*<error text>*/<cr><lf>
;
```

Where <error code> is a 4-character code and <error text> is a text string.

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

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

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

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

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

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

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

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

If the command is longer than 488 characters, the following error response is returned:

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

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.

Starting from Release 4.0 the maximum allowable size of the command is 750 characters.

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

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

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

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

If an input parameter name or value is not valid, the following error response is returned:

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

where <parameter name> is the name of the input parameter.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

If the command is denied based on restoration mode, the following error response is returned:

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

If a command cannot be aborted, the following error response is returned:

```
   sid date time
M  ctag DENY
   SCNA
   /* Status, Command Not Able to be aborted */
;
```

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

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

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

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

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

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

If an attempt is made to modify a red-lined cross connection, the following error response is returned:

```
   sid date time
M  ctag DENY
   ERLC
   /* Equipage, Red-Lined Circuit */
;
```

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

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

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

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

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

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

If a command is denied on the basis of the location of the path selector, the following error response is returned:

```
   sid date time
M  ctag DENY
   SARB
   /* Status, All Resources Busy, Command denied based on path
selector location */
;
```

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

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

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

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

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

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

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

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

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

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

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

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

For provisioning commands (non-RTRV commands) that take an AID range as input, if the command succeeded on only a nonempty subset of the AIDs, the following error response is returned for the AIDs that were not completed successfully. Note that the completion code is PRTL, not DENY.

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

The error codes and error text fields are as defined in the other error responses above.

If the command failed on all the AIDs, the completion code will be DENY, and there will only be a single error code and error text in the response.

For **RTRV** commands that take an AID range as input, if the command fails on a nonempty subset of the AIDs, and the failure is not related to filtering, the entire command will fail and one error response is returned.

If the error is related to filtering, the command completes successfully but only the data that matches is returned. For example, **RTRV-OC3** with an "ALL" AID range for all the ports on a shelf will return the data for the existing OC-3 circuit packs. **RTRV-OC3** with a single AID of a non-OC-3 port will fail.

RELATED TL1 MESSAGES

All other TL1 commands refer to the **RTRV-HDR** command for common requirements.

NAME

RTRV-IP-MAP: Retrieve TCP/IP map

The **RTRV-IP-MAP** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-IP-MAP:*tid*::*ctag*;

DESCRIPTION

The **RTRV-IP-MAP** command retrieves the entries from the TCP/IP application context ID map.

The **RTRV-IP-MAP** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-174 **RTRV-IP-MAP** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

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

The output is sorted by *ip*.

OUTPUT PARAMETERS

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

Table 3-175 **RTRV-IP-MAP** Output Parameters

Parameter Name	Description
spec_block	See the following table for the *spec_block* parameters.

Table 3-176 **RTRV-IP-MAP** Output *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
ip	IP address of the OS. This parameter is available in Release 4.

Table 3-176 RTRV-IP-MAP Output *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
acid	This parameter is available in Release 4. ACID is a value of up to twenty-three alphanumeric characters, which is the Application Context ID to be assigned to a particular IP address. Each OS has a value of ACID assigned. Values: ■ TL1MAINTENANCE ■ TL1MEMORYADMINISTRATION ■ TL1TEST ■ TL1OTHER1 ■ TL1PEERCOMM.

EXAMPLE INPUT/OUTPUT

The following example shows a successful command completion:

```
RTRV-IP-MAP:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "system::ip=198.78.46.8,acid=tl1memoryadministration"
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The error responses listed there also apply to the **RTRV-IP-MAP** command.

RELATED TL1 MESSAGES

DLT-IP-MAP

ED-NE

ENT-IP-MAP

RTRV-NE

NAME

RTRV-IP-ROUTE: Retrieve IP Route

The **RTRV-IP-ROUTE** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-IP-ROUTE:*tid*:*aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **RTRV-IP-ROUTE** command retrieves the IP-Route service.

The **RTRV-IP-ROUTE** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-177 RTRV-IP-ROUTE Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	This parameter is available in Release 1.0. Value: datacom AID (DCC circuit pack AID). See AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	See the following table for all ***spec_block*** parameters.

Table 3-178 **RTRV-IP-ROUTE** ***spec_block*** Input Parameters

Parameter Name	Description
map	This parameter refers to the routing table to be returned. Values: ■ **LOCAL** ■ **MANUAL** ■ **TAP** ■ **ALL**. The entries of the **LOCAL**, **MANUAL**, and **TAP** routing tables are returned when this parameter is given the value **ALL**.

OUTPUT FORMAT

After receiving the **RTRV-IP-ROUTE** command, the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** command section. The output parameters listed there also apply to the **RTRV-HDR** command.

Table 3-179 **RTRV-IP-ROUTE** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	This parameter is available in Release 1.0. Value: datacom AID (DCC circuit pack AID). See AID table in OSEG Appendix A.

Table 3-179 **`RTRV-IP-ROUTE`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters.

Table 3-180 **`RTRV-IP-ROUTE`** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
dest_ip	Destination IP address. Made up of four dot-separated decimal numbers ranging from 0 to 255.
dest_mask	Destination Mask. Values: 0…32.
nxthopadr	Next_Hop_Address. Values: ■ IPADDRESS Made up of four dot-separated decimal numbers ranging from 1 to 255 ■ NSAP A 20-byte (40-digit hex) string. The value is always an NSAP address when OWNER=TAP.
nxthopport	Next_Hop_Port. Values: ■ LAN ■ CLNP_TUNNEL. The value is always CLNP_TUNNEL when OWNER=TAP.
owner	Owner. Values: ■ LOCAL ■ MANUAL ■ TAP.
tapadver	TAP_ADVERTISE. Values: ■ YES ■ NO. The value is always a NO when OWNER=TAP.

Table 3-180 **RTRV-IP-ROUTE** *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
tapcost	TAP_COST. Values: ■ 0 … 65535.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-IP-ROUTE** command:

```
RTRV-IP-ROUTE:LT-WBM:1-1-#-#-dcc-cp:123456:::map=LOCAL;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dcc-cp:dest_ip=192.168.300.1,
     dest_mask=16,nxthopport=LAN:nxthopadr=192.168.200.21,
     owner=LOCAL,tapadver=YES,tapcost=20"
   "1-1-#-#-dcc-cp:dest_ip=192.168.300.2,dest_mask=16,"
     nxthopport=LAN:nxthopadr=192.168.200.22,"
     owner=LOCAL,tapadver=YES,tapcost=20"
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The error messages listed there also apply to the **RTRV-IP-ROUTE** command.

RELATED TL1 MESSAGES

DLT-IP-ROUTE

ED-IP-TUNNEL

ENT-IP-ROUTE

RTRV-IP-TUNNEL

NAME

RTRV-IP-TUNNEL: Retrieve IP Tunnel

The **RTRV-IP-TUNNEL** TL1 command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-IP-TUNNEL:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-IP-TUNNEL** command retrieves the IP-Tunneling service.

The **RTRV-IP-TUNNEL** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-181 **RTRV-IP-TUNNEL** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	This parameter is available in Release 1.0. Value: datacom AID (DCC circuit pack AID). See AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

After receiving the **RTRV-IP-TUNNEL** command, the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** command section. The output parameters listed there also apply to the **RTRV-HDR** command.

Table 3-182 **RTRV-IP-TUNNEL** Output Parameters

Parameter Name	Description
aid	This parameter is available in Release 1.0. Value: datacom AID (DCC circuit pack AID). See AID table in OSEG Appendix A.
spec_block	See the following table for all *spec_block* parameters.

Table 3-183 **RTRV-IP-TUNNEL** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
tadverstat	TAP_ADVERTISE_STATUS. This parameter controls the advertising status for the auto provisioning protocol. Values: ■ ENABLE ■ DISABLE (Default).

Table 3-183 **`RTRV-IP-TUNNEL`** *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
tapgroup	TAP_GROUP. This parameter defines the TAP group to which the system belongs. Values: ■ 0 … 65535. The default value is 0.
tlearnstat	TAP_LEARN_STATUS. This parameter controls the learning status for the auto provisioning protocol. Values: ■ ENABLE ■ DISABLE (Default).

EXAMPLE INPUT/OUTPUT

The following is an example of the **`RTRV-IP-TUNNEL`** command:

```
RTRV-IP-TUNNEL:LT-WBM:1-1-#-#-dcc-cp:123456;

   LT-WBM 00-01-01 08:00:00
M  123456 COMPLD
   "1-1-#-#-dcc-cp::tlearnstat=DISABLE,tadverstat=ENABLE,tapcost=35"
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **`RTRV-HDR`** command. The error messages listed there also apply to the **`RTRV-IP-TUNNEL`** command.

RELATED TL1 MESSAGES

`DLT-IP-ROUTE`

`ENT-IP-ROUTE`

`RTRV-IP-ROUTE`

`ED-IP-TUNNEL`

NAME

`RTRV-LOG-ALM:` Retrieve Log Alarm

The **`RTRV-LOG-ALM`** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

`RTRV-LOG-ALM``:`*`tid`*`::`*`ctag`*`::[`*`startdate`*`],[`*`starttime`*`],[`*`replytype`*`];`

DESCRIPTION

The **`RTRV-LOG-ALM`** command retrieves the alarm log. This log gives the user a history and time sequence of all of the most recent anomalous behavior detected by the system regarding equipment or facilities attached to the system.

The alarm log holds 1024 entries.

The **`RTRV-LOG-ALM`** command does not generate a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-183 **`RTRV-LOG-ALM`** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

Table 3-183 `RTRV-LOG-ALM` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
startdate	The Date For The Starting Point Of The Report. The format is YY-MM-DD. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
starttime	The Time For The Starting Point Of The Report. The format is HH-MM-SS. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
replytype	The Type of Reply. Values: ■ **BROWSE** (initial value) User Browsing. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, the first log entry in the log with a timestamp later than the ***startdate*** and ***starttime*** plus subsequent log entries will be returned. ■ **DBSYNC** Management system. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV-LOG-ALM** request completes successfully, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:[ntfcncde],condtype,[srveff],ocrdat,ocrtm,[condeff],
[monval],[thlev],[tmper][:\"conddescr\"]"
        ...
   "aid,aidtype:[ntfcncde],condtype,[srveff],ocrdat,ocrtm,[condeff],
[monval],[thlev],[tmper][:\"conddescr\"]"
;
```

OUTPUT PARAMETERS

Table 3-184 **RTRV-LOG-ALM** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. See the **RTRV-ALM** command for the syntax and description of this parameter.
aidtype	Access Identifier Type. See the **RTRV-ALM** command for the syntax and description of this parameter.
ntfcncde	Notification Code. See the **REPT ALM** command for the syntax and description of this parameter.
condtype	Condition Type. See the **RTRV-ALM** command for the syntax and description of this parameter.
srveff	Service Effect. See the **RTRV-ALM** command for the syntax and description of this parameter.
ocrdat	Occurrence Date. See the **RTRV-ALM** command for the syntax and description of this parameter.
ocrtm	Occurrence Time. See the **RTRV-ALM** command for the syntax and description of this parameter.
condeff	Condition Effect. See the **REPT EVT** command for the syntax and description of this parameter.
monval	Monitored Value. Only used for TCAs. See the **REPT EVT** command for the syntax and description of this parameter.

Table 3-184 **`RTRV-LOG-ALM`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
thlev	Threshold Level. See the **`REPT EVT`** command for the syntax and description of this parameter.
tmper	Time Period. Only used for TCAs. See the **`REPT EVT`** command for the syntax and description of this parameter.
conddescr	Condition Description. See the **`RTRV-ALM`** command for the syntax and description of this parameter.

EXAMPLE INPUT/OUTPUT

The following is an example of the **`RTRV-LOG-ALM`** command:

```
RTRV-LOG-ALM:LT-WBM::123456::;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-o13-w-13-1,OC12:CR,LOS,SA,01-01,07-29-13:\"LOS (Loss Of
Signal)\""
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there also apply to the **`RTRV-LOG-ALM`** command.

RELATED TL1 MESSAGES

`RTRV-ALM`

`RTRV-LOG-NTFCN`

`RTRV-LOG-PROTNSW`

`RTRV-LOG-USER`

NAME

RTRV-LOG-NTFCN: Retrieve Log Notification

The **RTRV-LOG-NTFCN** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-LOG-NTFCN:*tid*::*ctag*::[*startdate*],[*starttime*],
[*replytype]*;

DESCRIPTION

The **RTRV-LOG-NTFCN** command retrieves the notification log. This log allows the user to see the most recent activity that has caused updates to a management system database. This is useful in solving database audit problems. This information can also be used to resynchronize a management system with the NE after a communications outage between the two. The log contains updates caused by user actions and by system actions (state changes).

The notification log is a circular buffer that holds 1000 entries.

Changes in user-provisionable attributes are reported as the equivalent TL1 command that would cause that change.

Changes in non-user-provisionable attributes are reported using only the AID and the BLOCK parameters.

The **RTRV-LOG-NTFCN** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-185 `RTRV-LOG-NTFCN` Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
startdate	The date for the starting point of the report. The format is YY-MM-DD. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
starttime	The time for the starting point of the report. The format is HH-MM-SS. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
replytype	The Type of Reply. Values: ■ **BROWSE** (initial value) User Browsing. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, the first log entry in the log with a timestamp later than the ***startdate*** and ***starttime*** plus subsequent log entries will be returned. ■ **DBSYNC** Management system. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV-LOG-NTFCN** request completes successfully, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "umb:[ccb]:[aid]:[com_block]:[spec_block]:[state_block]"
        ...
   "umb:[ccb]:[aid]:[com_block]:[spec_block]:[state_block]"
;
```

OUTPUT PARAMETERS

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

Table 3-186 **RTRV-LOG-NTFCN** Output Parameters

Parameter Name	Description
umb	Update Management Block. The parameters within this block are positionally independent and are specified using a name-defined construct of parameter=value in a comma-separated list. The parameters are: ■ *DATE* The date of the notification in the form YY-MM-DD. ■ *TIME* The time of the notification in the form HH-MM-SS.
ccb	Command Code Block. The name of the TL1 command that would cause the change in the user-provisionable parameter.
aid	Access Identifier of the entity that was modified. See the AID table in OSEG Appendix A.
com_block	Common Block of the TL1 command that would cause the change in the user-provisionable parameter.
spec_block	Specific Block of the TL1 command that would cause the change in the user-provisionable parameter.
state_block	State Block of the TL1 command that would cause the change in the user-provisionable parameter.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-LOG-NTFCN** command:

```
RTRV-LOG-NTFCN:LT-WBM::123456::;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "DATE=01-08-15,TIME=07-59-59:ED-EQPT:1-1::ONCPI=2:"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-LOG-NTFCN** command.

RELATED TL1 MESSAGES

RTRV-LOG-ALM

RTRV-LOG-PROTNSW

RTRV-LOG-USER

NAME

RTRV-LOG-PROTNSW: Retrieve Log Protection Switch

The **RTRV-LOG-PROTNSW** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-LOG-PROTNSW:*tid*::*ctag*::[*startdate*],[*starttime*],
[*replytype*];

DESCRIPTION

The **RTRV-LOG-PROTNSW** command retrieves the protection switch log. This log gives a complete time-ordered list of switching activity which has occurred at the NE: because of network facility, or timing source conditions, or manual activity. Facility, equipment, and synchronization related switching activity is stored in this log. This knowledge is very useful in determining exactly what fibers were carrying specific traffic at any particular time.

The protection switch log is a circular buffer that should hold at least 512 entries.

The **RTRV-LOG-PROTNSW** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-187 `RTRV-LOG-PROTNSW` Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
startdate	The date for the starting point of the report. The format is YY-MM-DD. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
starttime	The time for the starting point of the report. The format is HH-MM-SS. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
replytype	The Type of Reply. Values: ■ **BROWSE** (initial value) User Browsing. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, the first log entry in the log with a timestamp later than the ***startdate*** and ***starttime*** plus subsequent log entries will be returned. ■ **DBSYNC** Management system. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV-LOG-PROTNSW** request completes successfully, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid,aidtype:EVT,condtype,condeff,ocrdat,ocrtm[:\"conddescr\"]"
        <0 or more of the line above>
   "aid:SW,,,ocrdat,ocrtm"
        <0 or more of the line above>
        <0 or more repetitions of this entire block>
;
```

OUTPUT PARAMETERS

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

Table 3-188 **RTRV-LOG-PROTNSW** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. Value: circuit pack or port AID. For SW log entries, this is the AID of the active circuit pack. See the AID table in OSEG Appendix A.
aidtype	AID Type. See the description of the *modifier* parameter in the **REPT EVT** message.
condtype	Condition Type. See the description of the *condtype* parameter in the **REPT EVT** message.
condeff	Condition Effect. See the description of the *condeff* parameter in the **REPT EVT** message.
ocrdat	Occurrence Date. See the description of the *ocrdat* parameter in the **REPT EVT** message.
ocrtm	Occurrence Time. See the description of the *ocrtm* parameter in the **REPT EVT** message.

Table 3-188 `RTRV-LOG-PROTNSW` Output Parameters (Sheet 2 of 2)

Parameter Name	Description
conddescr	Condition Description. See the description of the *conddescr* parameter in the **REPT EVT** message.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-LOG-PROTNSW** command:

```
RTRV-LOG-PROTNSW:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-o40-w-10-2,OC3:EVT,WKSWPR-2,TC,01-01,07-12-00:\"Protection
Switch, OC3 port, Lockout,, 1+1\""
   "sc-1-#-#-tmg0-cp:SW,,,01-01,07-13-00"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-LOG-PROTNSW** command.

RELATED TL1 MESSAGES

ACT-USER

REPT EVT

REPT SW

RTRV-LOG-ALM

RTRV-LOG-NTFCN

RTRV-LOG-USER

NAME

RTRV-LOG-SECU: Retrieve Log Security

The **RTRV-LOG-SECU** command is supported in release 4.0 for:

- WaveStar® TDM 10G (STM-64)

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-LOG-SECU:*tid*::*ctag*::[*startdate*,*starttime*];

DESCRIPTION

The **RTRV-LOG-SECU** command can be initiated by a user to retrieve the security information log activity from the total network element. This log gives the customer a history of login execution and attempts (successful and unsuccessful) in order to pinpoint responsibility for network element activity.The user security log is circular and can hold over 512 entries.

The following table lists the security-related commands that get logged into the security information log.

Table 3-189 Commands in Security Information Log (Sheet 1 of 2)

Security-Related Event	Status
ACT-USER	COMPLD or DENY
CANC-USER	COMPLD or DENY
CANC-USER-SECU	COMPLD or DENY
DLT-USER-SECU	COMPLD or DENY
ED-DAT	COMPLD or DENY
ED-NE-SECU	COMPLD or DENY

Table 3-189 Commands in Security Information Log (Sheet 2 of 2)

Security-Related Event	Status
`ED-PID`	COMPLD or DENY
`ED-USER-SECU`	COMPLD or DENY
`ENT-USER-SECU`	COMPLD or DENY
`INIT-EQPT` for system controller	COMPLD or DENY
`INIT-SYS`	COMPLD or DENY

The **`RTRV-LOG-SECU`** command does not generate a **`REPT DBCHG`** message.

INPUT PARAMETERS

Table 3-190 **`RTRV-LOG-SECU`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
startdate	The date for the starting point of the report. The format is YY-MM-DD. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
starttime	The time for the starting point of the report. The format is HH-MM-SS. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.

OUTPUT FORMAT

After receiving the **RTRV-LOG-SECU** command, the following system response is returned:

```
   sid date time
M  ctag COMPLD
   "login_id:umb:action:ccb:[com_block]:[spec_block]:[state_block]:ccde"
       ...
   "login_id:umb:action:ccb:[com_block]:[spec_block]:[state_block]:ccde"
;
```

OUTPUT PARAMETERS

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

Table 3-191 RTRV-LOG-SECU Output Parameters (Sheet 1 of 2)

Parameter Name	Description
login_id	Login ID. The login identification of the user. This is a character string of up to 10 characters.
umb	Update Management Block. The parameters within this block are positionally independent and are specified using a name-defined construct of parameter=value in a comma-separated list. The parameters are: DATE The date of the user action in the form YY-MM-DD. TIME The time of the user action in the form HH-MM-SS.

Table 3-191 **`RTRV-LOG-SECU`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
action	Action. This parameter indicates the reason for the log entry. Reasons for a logout entry: ■ Inactivity timeout ■ Forced logout ■ Self logout. Reason for login failure: ■ expired passwd ■ Invalid uid ■ Invalid passwd ■ Locked out uid. Other reasons: ■ NE security variable change.
ccb	Command Code Block. The name of the command.
com_block	Common Block of the Command.
spec_block	Specific Block of the Command.
state_block	State Block of the Command.
ccde	Completion Code. Value: ■ COMPLD or the 4-character error code.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-LOG-SECU:LT-WBM-789::123456;
   LT-WBM 98-01-01 08:00:00
M  123456 COMPLD
   "AIRMAIL:DATE=98-01-02,TIME=07-59-59:NE security variable change:
ED-NE-SECU::THRSHLD=30,INTRVL=60,AGE=90::COMPLD"
   "MVJOK:DATE=98-01-03,TIME=06-59-59:inactivity timeout:::::COMPLD"
   "WHIPPNY:DATE=98-01-04,TIME=09-59-59:invalid passwd:ACT-USER::::
IDNV"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-LOG-SECU** command.

RELATED TL1 MESSAGES

ACT-USER

RTRV-LOG-ALM

RTRV-LOG-NTFCN

RTRV-LOG-PROTNSW

RTRV-LOG-USER

NAME

RTRV-LOG-USER: Retrieve Log User

The **RTRV-LOG-USER** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-LOG-USER:*tid*::*ctag*::[*startdate*],[*starttime*],
[*replytype*];

DESCRIPTION

The **RTRV-LOG-USER** command retrieves the user session log. For security purposes, the customer can read this log to obtain the source login for any user-initiated network activity. The reply is not stored in the user session log; only the success/denial code is stored. Unsuccessful login attempts are placed in the security log, not here. Also, commands that are denied because of incorrect syntax are not logged in this file.

The user session log is a circular buffer that shall hold at least 512 entries.

The **RTRV-LOG-USER** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-192 `RTRV-LOG-USER` Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
startdate	The date for the starting point of the report. The format is YY-MM-DD. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
starttime	The time for the starting point of the report. The format is HH-MM-SS. If both ***startdate*** and ***starttime*** are omitted, the entire log is retrieved. Both ***startdate*** and ***starttime*** must be specified, or both must be omitted.
replytype	The Type of Reply. Values: ■ **BROWSE** (initial value) User Browsing. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, the first log entry in the log with a timestamp later than the ***startdate*** and ***starttime*** plus subsequent log entries will be returned. ■ **DBSYNC** Management system. If the requested ***startdate*** and ***starttime*** is in the log, those entries and any subsequent log entries are returned. If the requested ***startdate*** and ***starttime*** is NOT in the log, an SNVS error response is returned.

OUTPUT FORMAT

If the **RTRV-LOG-USER** request completes successfully, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "uid:umb:ccb:[aid]:[com_block]:[spec_block]:[state_block]:ccde"
        ...
   "uid:umb:ccb:[aid]:[com_block]:[spec_block]:[state_block]:ccde"
;
```

OUTPUT PARAMETERS

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

Table 3-193 **RTRV-LOG-USER** Output Parameters

Parameter Name	Description
uid	User ID. Refer to the **ACT-USER** command for a description of this parameter.
umb	Update Management Block. The parameters within this block are positionally independent and are specified using a name-defined construct of parameter=value in a comma-separated list. The parameters are: ■ *DATE* The date of the user action in the form YY-MM-DD. ■ *TIME* The time of the user action in the form HH-MM-SS.
ccb	Command Code Block. The name of the TL1 command.
aid	Access Identifier block of the TL1 command. In some security commands, the *aid* block can contain a *uid*.
com_block	Common Block Of The TL1 Command.
spec_block	Specific Block Of The TL1 Command.
state_block	State Block Of The TL1 Command.
ccde	Completion Code. Value: COMPLD or the 4-character TL1 error code.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-LOG-USER** command:

```
RTRV-LOG-USER:LT-WBM::123456::;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "DEVONNEMOORE:DATE=99-02-26,TIME=14-30-55:ED-EQPT:1-
1::ONCPI=2::COMPLD"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-LOG-USER** command.

RELATED TL1 MESSAGES

ACT-USER

RTRV-LOG-ALM

RTRV-LOG-NTFCN

RTRV-LOG-PROTNSW

NAME

RTRV-LPBK: Retrieve Loopback

The **RTRV-LPBK** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-LPBK-*modifier*:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-LPBK** command can be initiated by a user to retrieve the facility or cross-connect loopback information in the network element.

The **RTRV-LPBK** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-195 **RTRV-LPBK** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate or port type on which the retrieve loopback command is to act. Values: ■ **ALL** ■ **1GE** Only near-side loopback is supported. ■ **VC3** ■ **VC4** ■ **VC44C** (starting in Release 1)

Table 3-195 **RTRV-LPBK** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **VC416C** (starting in Release 2) ■ **STM1** ■ **STM4** ■ **STM16** ■ **STM1E**.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. The ***aid*** indicates the port or tributary AID for which the loopback information is being requested. AID ranging is supported. If an AID range is specified, only the ports or tributaries that have loopback active are reported. See the AID table in OSEG Appendix A. Values: port or tributary AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

Table 3-196 RTRV-LPBK Output Parameters

Parameter Name	Description
rate	Rate indicates the cross-connection rate or port type on which the retrieve command is to act. Values: ■ 1GE Only near-side loopback is supported. ■ VC3 ■ VC4 ■ VC44C (starting in Release 1) ■ VC416C (starting in Release 2) ■ STM1 ■ STM4 ■ STM16 ■ STM1E. This parameter is reported for a cross-connect AID.
aid	Access Identifier. The *aid* indicates the port or tributary AID for which the loopback information is being requested. See the AID table in OSEG Appendix A. Value: port or tributary AID. This parameter is reported for a cross-connect AID.
spec_block	See the following table for the *spec_block* parameters.

Table 3-197 RTRV-LPBK Output *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
nsflpbkstat	Specifies the current near-side facility loopback status on the *aid*. This parameter is available starting in Release 3. Values: ■ YES ■ NO.

Table 3-197 **RTRV-LPBK** Output *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
fsflpbkstat	Specifies the current far-side facility loopback status on the *aid*. This parameter is available starting in Release 3. Values: ■ YES ■ NO.
crslpbkstat	Specifies the current cross-connect loopback status on the *aid*. This parameter is available starting in Release 1. Values: ■ YES ■ NO.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **RTRV-LPBK** command by the network element. This example retrieves the cross-connect loopback information on an VC3 tributary from the network element:

```
RTRV-LPBK-VC3:LT-WBM-789:1-1-#-#-2-1-1:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-U-#-11-1-1:VC3:CRSLPBKSTAT=YES"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-LPBK** command.

RELATED TL1 MESSAGES

OPR-LPBK

RLS-LPBK

NAME

RTRV-MAP-NEIGHBOR: Retrieve Map Neighbor

The **RTRV-MAP-NEIGHBOR** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-MAP-NEIGHBOR:*tid*:[*aid*]:*ctag*;

DESCRIPTION

The **RTRV-MAP-NEIGHBOR** command will retrieve a list of all immediate OSI neighbors to the local network element (NE). This can include other network elements, as well as neighbors on the LAN, such as the CIT (i.e., an End System (ES)) and the Network Communication Controller.

The report will list all neighboring NEs or ESs provisioned as Level 2 (if any) and/ or Level 1 NEs or ESs within the local area as well as in other areas. Level 1 NEs or ESs in other areas are marked in the output with dcc=NO.

If there is a link failure between the local NE and its neighboring NE, or if the DCC is disabled, the neighbor NE entry will not appear in the report.

The **RTRV-MAP-NEIGHBOR** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-198 **`RTRV-MAP-NEIGHBOR`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. Value: DCC circuit pack AID - The neighbors for this DCC circuit pack AID are returned. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

The general format is as follows:

```
   sid date time
M  ctag COMPLD
   "aid[,rate]:thru[,lpaid]:spec_block"
   ...
   "aid[,rate]:thru[,lpaid]:spec_block"
;
```

The following is a specific output format:

```
   sid date time
M  ctag COMPLD
   "aid::localnet=x"
   "aid:LAN:net=x[,level2=x][,dcc=x]"
         <0 or more of the line above>
         <0 or more of this entire block for another aid>
   "aid:ON:net=x[,level2=x][,dcc=x]"
         <0 or more of the line above>
    "aid,rate:DCC,lpaid:[npaid=x],net=x[,nename=x][,level2=x][,dcc=x]
[,dcctype=x]"
         <0 or more of the line above>
;
```

The output lines are sorted in alphanumeric ascending order by *aid*; in other words, all *aids* of the same value are listed together. For DCC neighbors, the output is sorted in ascending order by *lpaid*.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The requirements listed there also apply to the **RTRV-MAP-NEIGHBOR** command. The following additional output parameters apply to **RTRV-MAP-NEIGHBOR**.

Table 3-199 RTRV-MAP-NEIGHBOR Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Datacom Identifier. This is a DCC circuit pack AID. See the AID table in OSEG Appendix A.
rate	The DCC Port Rate. This parameter is shown for a DCC neighbor. Values: See the valid optical values of “rr” for **RTRV-rr** command.
thru	The type of connectivity between the system and its neighbor. Values: ■ DCC ■ LAN ■ ON. Note that ON is not included in single NSAP NEs.
lpaid	Local Port Association AID. This parameter is used for DCC neighbors. It may be missing for non-LinkID neighbors. Value: port AID. See the AID table in OSEG Appendix A.

Table 3-199 **`RTRV-MAP-NEIGHBOR`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters. The following *spec_block* parameters are for the DCC neighbor, IAO-LAN neighbor and ON neighbor lists. Refer to the general format and specific format in the output format section.

Table 3-200 **`RTRV-MAP-NEIGHBOR`** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
dcc	Missing Router Indicator. This field has value NO when the neighbor is in another routing area and the local system and the neighbor are not both Level2 ISs. Otherwise, this field does not appear in the output. Starting with Release 4.0, this parameter is no longer supported to improve the connectivity robustness.
dcctype	Channel Type. Beginning with Release 1, this parameter specifies whether the values displayed in the *spec_block* refer to the Line or Section DCC. If this parameter is omitted, any DCCs that are active appear in the output (either Line or Section or both). Values: ■ SECTION ■ LINE.
level2	This field is the IS router level if the neighbor map is retrieved from a level 1 and level 2 router. If the neighbor map is retrieved from a level 1 only router, then only the default level 2 router is shown with the level2 value of Y. Otherwise, the level2 value is N. Values: ■ Y ■ N. Starting with Release 4.0, this parameter is no longer supported to improve the connectivity robustness.

Table 3-200 `RTRV-MAP-NEIGHBOR` *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
localnet	Local NET. This is the Network Entity Title (NET) of the DCC circuit pack. The NET is the same as the NSAP (The Network Service Access Point) with the last byte set to 00 (hex). The NSAP is the actual network-wide address of the node residing in the SONET network, which includes the DCC neighbor, LAN and ON neighbor. The NSAP is a 20 bytes (or 40 hexadecimal digits) address made up of multiple fields which allow the network provider to provision domains and areas within the network. Refer to the **`ENT-ULS-DCC-L3`** command for the format of the NSAP.
nename	Starting with Release 1, this parameter replaces the *tid* parameter. This parameter may be shown for DCC neighbors. It is TL1 text string of up to 20 characters and 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
net	This field is the Network Entity Title (NET) of one OSI neighbor. The NET is the same as the NSAP (The Network Service Access Point) with the last byte set to 00 (hex). The NSAP is the actual network-wide address of the node residing in the SONET network, which includes the DCC neighbor, IAO-LAN and ON neighbor. The NSAP is a 20 bytes (or 40 hexadecimal digits) address made up of multiple fields which allow the network provider to provision domains and areas within the network. Refer to the **`ENT-ULS-DCC-L3`** command for the format of the NSAP.
npaid	Neighbor Port AID. This parameter is used for DCC neighbors. It may be missing for non-LinkID neighbors. Value: port AID. See the AID table in OSEG Appendix A.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-MAP-NEIGHBOR** command:

```
RTRV-MAP-NEIGHBOR:LT-WBM:1-2-#-#-dccei-cp:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-2-#-#-dccei-cp::localnet=39840F800000000000000000000000000000a300"
   "1-2-#-#-dccei-cp:ON:net=39840F800000000000000000000000000000a200,
level2=N"
   "1-2-#-#-dccei-cp:ON:net=39840F800000000000000000000000000000a500,
level2=N"
   "1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-02-1:npaid=1-2-#-#-14-1,
net=39840F800000000000000000000000000000a400,
nename=LT-WBM1,level2=N,dcctype=SECTION"
   "1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-08-1:npaid=1-2-#-#-04-1,
net=39840F800000000000000000000000000000a400,
nename=LT-WBM1,level2=N,dcctype=SECTION"
   "1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-06-1:npaid=1-2-#-#-04-1,
net=39840F800000000000000000000000000000a600,
nename=LT-WBM3,level2=N,dcctype=SECTION"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The requirements listed there also apply to the **RTRV-MAP-NEIGHBOR** command.

RELATED TL1 MESSAGES

ENT-ULSDCC-L3

RTRV-MAP-NETWORK

RTRV-MAP-RING

NAME

RTRV-MAP-NETWORK: Retrieve Map Network

The **RTRV-MAP-NETWORK** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 1.0:

RTRV-MAP-NETWORK:*tid*:[*aid*]:*ctag*::[*level2*];

DESCRIPTION

The **RTRV-MAP-NETWORK** command will retrieve a list of the OSI systems that are reachable via the OSI stack(s) at local NE. This can include other transmission network elements reachable via the DCC and LAN, and it can also include other non-transmission OSI systems like the Network Communication Controller. On a multi-NSAP system, the subracks are also listed as separate OSI systems.

Unlike **RTRV-MAP-NEIGHBOR**, a network element is only listed once in the report.

If the local NE is provisioned as a Level 2 IS, the report will list the reachable Level 2 IS NEs across all areas, plus the Level 1 NEs in the local area.

If the local NE is provisioned as a Level 1 IS, the report will list the reachable NEs (including the default Level 2 IS) in the local Level 1 area only.

The local OSI system is also listed in the report. For multi-NSAP network elements, the “local OSI system” will be the main controller and/or the subrack.

The **RTRV-MAP-NETWORK** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-201 **RTRV-MAP-NETWORK** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
level2	IS Router Level. Value: ■ **N** (initial value) Local NE provisioned as a Level 1 IS. Report will list only the reachable NEs (including the default Level 2 IS) in the local Level 1 area. Starting with Release 1, the parameter ***level2*** can also have the value: ■ **Y** Local NE provisioned as a Level 2 IS. Report will list the reachable Level 2 IS NEs across all areas, plus the Level 1 NEs in the local area.
aid	Access Identifier. This parameter is available starting in Release 1. This parameter can have a DCC circuit pack AID value. If this parameter is omitted, then the network relative to all of the sub-racks are returned. See the AID table in OSEG Appendix A.

OUTPUT FORMAT

In response to a valid **RTRV-MAP-NETWORK** command, the following output report is returned to the user:

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

The output is a list of NSAPs sorted by area. Within each area, local NSAPs are listed first.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The requirements listed there also apply to the **RTRV-MAP-NETWORK** command.

Table 3-202 **RTRV-MAP-NETWORK** Output Parameters

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters.

Table 3-203 **RTRV-MAP-NETWORK** *spec_block* Output Parameters

Parameter Name	Description
aid	Starting with Release 2, this field is the Access Identifier - DCC circuit pack AID associated with each output line. Values: circuit pack AID. See the AID table in OSEG Appendix A.
level2	Starting with Release 1, this field is the level2 IS router. Values: ■ Y ■ N.
net	This field is the Network Entity Title (NET). The NET is the same as the NSAP (Network Service Access Point) with the last byte set to 00 (hex). The NSAP is the actual network-wide address of the node residing in the SONET network, which includes the DCC neighbor, LAN and ON neighbor. (In multiple-NSAP network elements, the “local OSI system” is the main controller and/or the subrack.) The NSAP is a 20 bytes (or 40 hexadecimal digits) address made up of multiple fields which allow the network provider to provision domains and areas within the network. Refer to the **ENT-ULSDCC-L3** command for the format of the NSAP.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter. This parameter is only listed for NSAPs within the local NE.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-MAP-NETWORK** command:

```
RTRV-MAP-NETWORK:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "tid=LT-WBM,net=39840F800000000000000000000000000000aa00,level2=Y"
   "tid=LT-WBM,net=39840F800000000000000000000000000000ab00,level2=Y"
   "tid=LT-WBM,net=39840F800000000000000000000000000000a300,level2=Y"
   "tid=LT-WBM,net=39840F800000000000000000000000000000a400,level2=Y"
   "net=39840F800000000000000000000000000000a100,level2=Y"
   "net=39840F800000000000000000000000000000a200,level2=Y"
   "net=39840F800000000000000000000000000000a500,level2=Y"
   "net=39840F800000000000000000000000000000a600,level2=Y"
   "net=39840F800000000000000000000000000000a700,level2=Y"
   "net=39840F800000000000000000010000000000a800,level2=N"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-MAP-NETWORK** command.

RELATED TL1 MESSAGES

ENT-ULSDCC-L3

RTRV-MAP-NEIGHBOR

RTRV-MAP-RING

NAME

RTRV-MAP-RING: Retrieve Map Ring

The **RTRV-MAP-RING** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2, M2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-MAP-RING:*tid*:[*aid*]:*ctag*::[*rid*];

Starting in Release 2, the input format is:
RTRV-MAP-RING:*tid*:[*aid*]:*ctag*::[*rid*][,*mapsrc*];

DESCRIPTION

The **RTRV-MAP-RING** command generates a report listing all network elements in a local transmission ring.

You can select a ring by using either a protection group AID or a ring ID.

This command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-204 `RTRV-MAP-RING` Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the description of this parameter. (i.e., It consists of alphanumeric and the dash/hyphen characters).
aid	Access Identifier. Value: protection group AID or omitted. See the AID table in OSEG Appendix A. If the ***aid*** is omitted, the ***rid*** parameter is used to select a ring.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
rid	Ring Identification Name. Value: an ASCII string of up to 15 characters from the TID character set or this parameter may be omitted. If this parameter is specified, the output will contain information about the protection group associated with that ring ID. If the ***rid*** is omitted, the ***aid*** parameter is used to select a ring. The value of ***aid*** and ***rid*** cannot both be omitted. Starting in Release 3.0, the value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
mapsrc	Map Source. Starting with Release 2, it indicates the source of the ring map. The default source of the ring map is from the DCCEI controller. It shows the ring map data that was most recently gathered by the DCCEI; if insufficient data is gathered, a one node ring map is reported. When NVMRING is specified, if there is a valid and complete ring map in NVM, it will be reported. Otherwise, nothing will be reported. The valid ring map in NVM is used by the BLSR protection group, even if the ring map data in the DCCEI is incomplete. Values: ■ **DCCEI** (initial value) ■ **NVMRING**

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
   "aid:rid,localnid:spec_block"
    ...
    ...
   "aid:rid,localnid:spec_block"
;
```

OUTPUT PARAMETERS

For open rings, the output starts at the end with the lower *nid* value and continues to the other end.

For closed rings, the output starts at the node with the lowest *nid* value and continues in the direction of the first node's East neighbor.

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The requirements listed there also apply to the **RTRV-MAP-RING** command. The following table shows the additional output parameters that apply to the **RTRV-MAP-RING** command:

Table 3-205 **RTRV-MAP-RING** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier - protection group AID. Value: protection group AID. See the AID table in OSEG Appendix A.
rid	Ring Identification Name. Value: an ASCII string of up to 15 characters from the TID character set. Starting in Release 3.0, the value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
localnid	Local Node ID. This is an identifier assigned to each NE. When automatic ring discovery is enabled, the value is based on its relative NET value. It is the ID of the reporting node. Value: Integer with a range of 0-15.

Table 3-205 `RTRV-MAP-RING` Output Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters. The following *spec_block* parameters are related to ring map list.

Table 3-206 `RTRV-MAP-RING` *`spec_block`* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
continuity	Transmission Continuity Status. Values: ■ UP - The link is working. ■ DOWN - The link has failed. ■ OPEN - The link is non-existent, as in an open ring. ■ UNKNOWN - The link ID has not been established. ■ ISOLATED - The link is in an isolated part of a segmented ring.
linkid	Link Identifier. The format of this parameter is: *linkid*=\"{*nename*,[*port*],*direction*},{*nename*,[*port*],*direction*}\" If this parameter is not available, the value is omitted. Where: ■ nename Value: TL1 text string of up to 20 characters and 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language) will be allowed. ■ port Value: port AID. If the port AID is not known, this field is omitted. See the AID table in OSEG Appendix A. ■ direction Value: E, W.

Table 3-206 **`RTRV-MAP-RING`** *`spec_block`* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
net	This field is the Network Entity Title (NET). The NET corresponds to the first tid/nename listed in the *linkid spec_block* parameter, not the second tid/nename. The NET is the same as the NSAP (Network Service Access Point) with the last byte set to 00 (hex). The NSAP is the actual network-wide address of the node residing in the SONET network, which includes the DCC neighbor. The NSAP is a 20 bytes (or 40 hexadecimal digits) address made up of multiple fields which allow the network provider to provision domains and areas within the network. Refer to the **`ENT-ULSDCC-L3`** command for the format of the NSAP.
nid	Node Identifier. This is the identity of each node in the ring. It is the node ID in the ring corresponding to the first tid/nename listed in the *linkid spec_block* parameter, not the second tid/nename. Value: an integer with a range of 0-15.

EXAMPLE INPUT/OUTPUT

Refer to the following figure, Open Ring (RingID1), for an example of an open ring. In this open ring, the BLSR ring map for RingID1 is provided by a management system. This figure shows:

1. RingID1
2. NodeLinkMap list for an open ring:
    - — NodeID1, [{nename-1,p7,W}, {nename-3,p2,E}]
    - — NodeID3, [{nename-3,p9,W}, {nename-0,p1,E}]
    - — NodeID0, [{nename-0,p5,W}, {nename-2,p13,W}]
    - — NodeID2, [{nename-2,,None}, {nename-1,,None}]
3. local NodeID = NONE

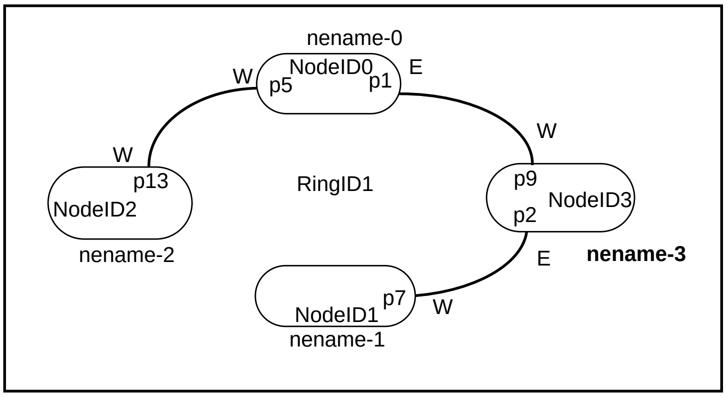


Figure 1. Open Ring (RingID1)

The following is an example of the **`RTRV-MAP-RING`** command for Open Ring:

```
RTRV-MAP-RING:NENAME-1:1-1-f01:123456;

   NENAME-1 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-f01:RingID1,1:nid=1,linkid=\"{nename-1,1-1-f01-ew-tr4-1,W},
{nename-3,1-1-#-#-tr2-1,E}\",continuity=UP,
net=39840F8000000000000000000000000000a100"
   "1-1-f01:RingID1,1:nid=3,linkid=\"{nename-3,1-1-#-#-tr3-1,W},
{nename-0,1-1-#-#-tr1-1,E}\",continuity=UP,
net=39840F8000000000000000000000000000a300"
   "1-1-f01:RingID1,1:nid=0,linkid=\"{nename-0,1-2-#-#-tr2-1,W},
{nename-2,1-2-#-#-tr1-1,W}\",continuity=UP,
net=39840F8000000000000000000000000000a000"
   "1-1-f01:RingID1,1:nid=2,linkid=\"{nename-2,,},
{nename-1,,}\",continuity=OPEN,
net=39840F8000000000000000000000000000a200"
;
```

Refer to the following figure, ring map for Closed Ring at nename-3, for an example of a closed ring. In this closed ring, the BLSR ring map for RingID1 is provided by NodeID3. This figure shows:

1. RingID1
2. NodeLinkMap list for a closed ring:
   - — NodeID0, [{nename-0,p1,E}, {nename-3,p9,W}]
   - — NodeID3, [{nename-3,p2,E}, {nename-1,p7,W}]
   - — NodeID1, [{nename-1,p9,E}, {nename-2,p4,E}]
   - — NodeID2, [{nename-2,p13,W}, {nename-0,p5,W}]

3. Local NodeID = NodeID3

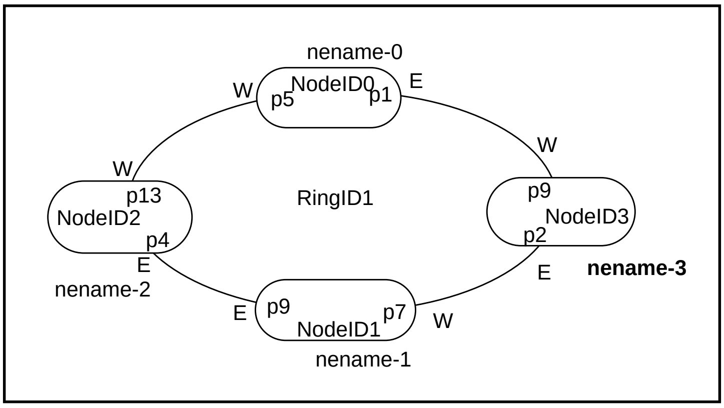


Figure 2. Ring Map for Closed Ring at nename-3

The following is an example of the **RTRV-MAP-RING** command for Closed Ring:

```
RTRV-MAP-RING:NENAME-3::123456:RingID1;

   NENAME-3 01-08-15 08:00:
M  123456 COMPLD
   "1-1-f01:RingID1,3:NID=0,linkid=\"{nename-0,1-1-#-#-tr4-1,E},
{nename-3,1-1-f01-ww-tr2-1,W}\",continuity=UP,
net=39840F80000000000000000000000000000a000"
   "1-1-f01:RingID1,3:NID=3,linkid=\"{nename-3,1-1-f02-ew-tr3-1,E},
{nename-1,1-1-#-#-tr1-1,W}\",continuity=UP,
net=39840F80000000000000000000000000000a300"
   "1-1-f01:RingID1,3:NID=1,linkid=\"{nename-1,1-2-#-#-tr4-1,E},
{nename-2,1-2-#-#-tr3-1,E}\",continuity=UP,
net=39840F80000000000000000000000000000a100"
   "1-1-f01:RingID1,3:NID=2,linkid=\"{nename-2,1-2-#-#-tr2-1,W},
{nename-0,1-2-#-#-tr1-1,W}\",continuity=UP,
net=39840F80000000000000000000000000000a200"
;
```

The following example shows the response when the automatic ring discovery has been disabled and the user provisions the ring map information. The local node can only provide information which has been given. It has no knowledge beyond the nename which it can derive from the ring map of the link information at the other nodes.

```
RTRV-MAP-RING:NENAME-3::123456:RingID1,manual;

   NENAME-3 01-08-15 08:00:
M  123456 COMPLD
   "1-1-f01:RingID1,3:nid=0,linkid=\"{NENAME-0,,},
{NENAME-3,1-1-f01-ww-tr2-1,W}\",continuity=UNKNOWN"
   "1-1-f01:RingID1,3:nid=3,linkid=\"{NENAME-3,1-1-f01-ew-tr3-1,E},
{NENAME-1,,}\",continuity=UNKNOWN"
   "1-1-f01:RingID1,3:nid=1,linkid=\"{NENAME-1,,},
{NENAME-2,,}\",continuity=UNKNOWN"
   "1-1-f01:RingID1,3:nid=2,linkid=\"{NENAME-2,,},
{NENAME-0,,}\",continuity=UNKNOWN"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-MAP-RING** command.

RELATED TL1 MESSAGES

ENT-ULSDCC-L3

RTRV-MAP-NEIGHBOR

RTRV-MAP-NETWORK

NAME

RTRV-MNTC: Retrieve Maintenance Signal

The **RTRV-MNTC** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-MNTC-*modifier*:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-MNTC** command can be used to retrieve maintenance signals from physical tributaries.

The information returned by the **RTRV-MNTC** command is similar to the information that is retrieved by the **RTRV-rr** command.

RTRV-MNTC retrieves information for physical tributary, as contrasted with **RTRV-rr** which returns information for logical tributary. Specifying a physical AID lets the user access an entity whether or not that entity is active. Even if a fellow member of a protection group is active, **RTRV-MNTC** lets the user retrieve maintenance signal information from the inactive members. For some parameters, **RTRV-MNTC** returns information for ports.

The **RTRV-MNTC** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-207 **`RTRV-MNTC`** Input Parameters

Parameter Name	Description
aid	Access Identifier. Values: ■ physical tributary AID ■ port AID. Range is supported for port, pack, or up to a maximum level of shelf. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to **`RTRV-HDR`** command for input parameter syntax and description of this parameter.
modifier	This parameter is a modifier to the command and may have one of the following values: ■ **STM1** Retrieve parameters for synchronous transport mode 1. ■ **STM4** Retrieve parameters for synchronous transport mode 4. ■ **STM16** Retrieve parameters for synchronous transport mode 16. ■ **STM64** Retrieve parameters for synchronous transport mode 64. ■ **VC3** This requests maintenance information for virtual container 3. This modifier value is also applicable to VC4 and concatenated tributaries.
tid	Target Identifier. Refer to **`RTRV-HDR`** command for input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV-MNTC** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **RTRV-MNTC** command. Additional parameters that specifically apply to this command are defined below.

The table that follows describes the output parameters for **RTRV-MNTC**.

Table 3-208 **RTRV-MNTC** Output Parameters

Parameter Name	Description
aid	Access Identifier. Values: ■ Physical tributary AID ■ Port AID
spec_block	See the following table for all *spec_block* parameters.

Table 3-209 **`RTRV-MNTC`** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
inql	Incoming Quality Level on S1 byte (starting in Release 2.1). This shows the incoming quality level message on the S1 Line overhead byte. If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output. Values if *istd* is SDH: ■ DNU (initial value) ■ PRC ■ SSUT ■ SSUL ■ SEC ■ INVALID ■ NA - not available. Valid for ***modifier*** value STM1. Valid for ***modifier*** value STM4. Valid for ***modifier*** value STM16. Valid for ***modifier*** value STM64.
outql	Outgoing Quality Level on S1 byte (starting in Release 2.1). This parameter shows the outgoing quality level message on the S1 overhead byte. Values for SDH are: ■ DNU ■ PRC ■ SSUT ■ SSUL ■ SEC. Valid for ***modifier*** value STM1. Valid for ***modifier*** value STM4. Valid for ***modifier*** value STM16. Valid for ***modifier*** value STM64.

Table 3-209 `RTRV-MNTC` *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
ptrc	Path Trace. This parameter shows the value of the Path Trace Identifier on the incoming path overhead J1 byte of a non-terminated tributary. Valid for ***modifier*** value VC3. Value: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D) ■ NA - not available. The length displayed is set with the *ptrcrfmt* parameter. The length of the transmitted path trace, as determined by *ptrcwfmt*, may be different from the displayed length. If the received trace is smaller than indicated by *ptrcrfmt*, then it is padded with zeros; if longer, then it is truncated. If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output.
ptrcrfmt	Starting in Release 3, the read format of J1, the incoming path trace (*ptrc*). Values: ■ **1** One byte value - a single byte (hexadecimal format using the printable T.50/ASCII character set). This is the initial value. ■ **16** 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. ■ **64** 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed. Valid for ***modifier*** value VC3.
siglb	Signal Label. This parameter shows the value of Signal Label on the incoming path overhead C2 byte of a non-terminated tributary. The value of this parameter is a 2-digit hex.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-MNTC** command:

```
RTRV-MNTC-VC3:LT-WBM:1-1-u-#-16-8-1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-16-8-1:ptrc=31323334353637383940414243444 5"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

RTRV-rr

NAME

RTRV-NE: Retrieve Network Element

The **RTRV-NE** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL):S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-NE:*tid*::*ctag*;

DESCRIPTION

The **RTRV-NE** command retrieves the attributes associated with the network element at the system level but not associated with any particular facility or equipment unit.

The **RTRV-NE** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-210 **RTRV-NE** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV-NE** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

Table 3-211 **RTRV-NE** Output Parameters

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters.

Table 3-212 **RTRV-NE** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
tl1tcpipgw	This parameter is available starting with Release 4. It enables or disables the TCP/IP Gateway application, which is a pure TCP/IP to OSI conversion. Values: ■ ENABLE ■ DISABLE (initial value).

Table 3-212 RTRV-NE *spec_block* **Output Parameters (Sheet 2 of 2)**

Parameter Name	Description
tunstat	IP_TUNNEL_STATUS. This parameter enables or disables the IP tunneling application which allows IP packages to be transported transparently through the OSI network. Values: ■ DISABLE (initial value) ■ ENABLE.

EXAMPLE INPUT/OUTPUT

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ED-NE

NAME

RTRV-NE-SECU: Retrieve Network Element Security

The **RTRV-NE-SECU** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-NE-SECU:*tid*::*ctag*;

DESCRIPTION

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

The **RTRV-NE-SECU** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-213 **RTRV-NE-SECU** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

If the network element fully complies with the **RTRV-NE-SECU** request, the following normal system response is returned:

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

OUTPUT PARAMETERS

Table 3-214 **RTRV-NE-SECU** Output Parameters

Parameter Name	Description
uid	User ID of the user that initiated the **RTRV-NE-SECU** command. This parameter is available starting in Release 1. Listed below this *uid* are *uids* of all the other sessions. If the user from which the **RTRV-NE-SECU** command was issued is logged on via other sessions, the *uid* list will contain each other instance of the *uid*, but the additional listing is just like the listing of any other user, without the additional user information. Values: Refer to the **ACT-USER** command.
spec_block	See the following table for all *spec_block* parameters.

Table 3-215 **`RTRV-NE-SECU`** *spec_block* Output Parameters

Parameter Name	Description
intrvl	Lockout Period. This parameter is available starting in Release 1. The time during which login attempts using that *uid* will not be allowed. This occurs when the number of consecutive invalid login attempts by a *uid* reaches *thrshld*. When *intrvl* expires, login attempts will again be allowed from that *uid*. If this parameter is set to 0 (zero), the lockout feature is disabled. Values (in minutes): 0-99.
thrshld	Lockout Threshold. This parameter is available starting in Release 1. The maximum number of consecutive invalid login attempts that are allowed by a *uid*. If the count of invalid login attempts is equal to the threshold, the *uid* is locked out for *intrvl* period of time. If a login attempt is successful, the count of invalid login attempts by that *uid* is reset to zero. Values: 2-99.
usrage	User ID Aging Period. This parameter is available starting in Release 2.1. If a *uid* has not been used during this time interval, it will be disabled. Value (in days): 0-999. The initial value is 10. A value of 0 disables user ID aging.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **`RTRV-NE-SECU`** command by the network element:

```
RTRV-NE-SECU:LT-WBM-789::123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   “kjlee::THRSHLD=3,INTRVL=1”
   “njsmith”
   “mvjok”
   “airmail”
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **RTRV-NE-SECU** command.

RELATED TL1 MESSAGES

ACT-USER

ED-NE-SECU

NAME

RTRV-PM: Retrieve Performance Monitoring

The **RTRV-PM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-PM-*modifier*:*tid*:*aid*:*ctag*::[*montype*],[*monlev*],[*locn*],
[*dirn*],*tmper*,[*mondat*],[*montm*];

DESCRIPTION

The **RTRV-PM** command is initiated by a user to request the network element to send the current and/or historical Performance Monitoring (PM) data associated with one or more facilities. For each value in the ***montype*** parameter of the **RTRV-PM** Input Parameters table, data will be stored in the current 15-minute period, the 32 previous 15-minute periods (past 8 hours worth of data), current day, and previous day periods.

For retrieval of Ethernet PM parameters see **RTRV-EPM**.

The **RTRV-PM** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-216 **RTRV-PM** Input Parameters (Sheet 1 of 6)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the retrieve pm command is to act. Values:

Table 3-216 **`RTRV-PM`** Input Parameters (Sheet 2 of 6)

Parameter Name	Description
	■ **STM1** ■ **STM4** ■ **STM16** ■ **STM64** ■ **STM1E** ■ **VC3** ■ **VC4** ■ **VC44C** ■ **VC416C**.
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. Range is supported up to system or shelf level. See the AID table in OSEG Appendix A. Values: ■ port AID ■ trib AID.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
montype	This is the monitored parameter type for which data is requested. If the value is omitted, this parameter defaults to **ALL**. The following values are for STM1, STM1E, STM4, STM16 and STM64 ***modifiers*** only: ■ **RS-N-ES** ■ **RS-N-SES** ■ **RS-N-BBE** ■ **RS-N-UAS** ■ **MS-N-ES** ■ **MS-F-ES** ■ **MS-N-SES** ■ **MS-F-SES**

Table 3-216 **`RTRV-PM`** Input Parameters (Sheet 3 of 6)

Parameter Name	Description
	■ **MS-N-BBE** ■ **MS-F-BBE** ■ **MS-N-UAS** ■ **MS-F-UAS** ■ **ALL**. The following values are for STM64 ***modifier*** only: ■ **MS-N-FECC** ■ **MS-N-FECU**. The following values are for STM16 and STM64 ***modifiers*** only: ■ **LBCN** ■ **OPT** ■ **OPR** [physical]. The following values are for VC3, VC4, VC44C and VC416C ***modifiers*** only: ■ **VC-N-ES** ■ **VC-F-ES** ■ **VC-N-SES** ■ **VC-F-SES** ■ **VC-N-BBE** ■ **VC-F-BBE** ■ **VC-N-UAS** ■ **VC-F-UAS** ■ **ALL**.

Table 3-216 **`RTRV-PM`** Input Parameters (Sheet 4 of 6)

Parameter Name	Description
monlev	This provides the level for the monitored PM parameter. This parameter may be omitted or have one of the following values: ■ **1-UP** Means the NE will report non-zero data only. ■ **0-UP** Means the NE will report zero and all positive data. If the value is omitted, this parameter defaults to **1-UP**.
locn	Location for which the PM data is monitored. This parameter may be omitted or have one of the following values: ■ **NEND** Near-End PM data is requested (default). ■ **FEND** Far-End PM data is requested. This is not applicable to SONET physical and section layers and DS3 line PM. ■ **ALL** All near-end and far-end data is requested. If the value is omitted, this parameter defaults to **NEND**.
tmper	Time Period. This requests PM data for a specified time interval. It may have one of the following values: ■ **15-MIN** This requests PM data in 15-minute intervals. ■ **1-DAY** This requests daily PM data.
mondat	Monitored Date. This requests the beginning date of the interval for which the PM data is to be reported. For both values of ***tmper*** parameter, the maximum allowable range of valid dates includes the current and previous one day. This parameter may be omitted or have one of the following values: ■ **MM-DD** Month-Day of year. Current date is the default value. A leading zero is optional. ■ **ALL** Current and previous day. If the value is omitted, the default value is used.
montm	Monitored Time. This specifies the beginning time of day of the requested PM period that was set by ***tmper*** parameter. This parameter may be omitted or have one of the following values:

Table 3-216 **RTRV-PM** Input Parameters (Sheet 5 of 6)

Parameter Name	Description
	■ **HOD-MOH** Hour Of Day-Minute Of Hour, where **HOD** ranges from **0** to **23**, and **MOH** is **0**, **15**, **30**, and **45**. A leading zero is optional. For example, 00 means 0. ■ **ALL** All applicable beginning times for the given ***mondat*** value. If this parameter is omitted, the PM period for the current time will be reported. Starting in Release 2.0, the user shall be able to specify a monitored time in three modes: 1) A monitored time interval (i.e., from hour-minutes to hour-minutes: HOD-MOH&&THOD-TMOH). 2) A single time interval (i.e., the hour and minutes for the appropriate 15-minute data: HOD-MOH). 3) All applicable beginning times for the given ***mondat*** value (i.e., all). Where **HOD-MOH** represents the **start** of the requested PM retrieval period (hours and minutes) and **THOD-TMOH** represents the **end** of the requested PM retrieval period. When the **THOD-TMOH** is not specified, **only** the PM data for the retrieval period specified by **HOD-MOH** will be retrieved. ■ **HOD-MOH** This specifies the beginning time of day of the requested PM period that was set by ***tmper*** parameter. This parameter may be omitted or have one of the following values: Hour Of Day-Minute Of Hour, where **HOD** ranges from **0** to **23** and **MOH** is **0**, **15**, **30**, and **45**. A leading zero is optional. For example, 00 means 0. If this parameter is omitted, the PM period for the current time will be reported.

Table 3-216 **`RTRV-PM`** Input Parameters (Sheet 6 of 6)

Parameter Name	Description
	■ **THOD-TMOH** To Hour Of Day-To Minute Of Hour, where **THOD** ranges from **0** to **23** and **TMOH** is **0**, **15**, **30**, and **45**. A leading zero is optional. For example, 00 means 0. Parameter grouping shall be used when specifying **THOD-TMOH**. For example, 08-15&&09-00 specifies the **HOD-MOH** and **THOD-TMOH** of 08-15 and 09-00, respectively. **THOD-TMOH** of $$-$$ indicates the current Hour Of Day-Minute Of Hour. **THOD-TMOH** of ##-## indicates the previous 15-min interval. ■ **ALL** All applicable beginning times for the given ***mondat*** value. If the ***montm*** value provided does not correspond exactly to the network element PM reporting boundary, the value will be rounded up to the next applicable boundary (for example, **09-06** for a 15-minute PM data is rounded up to **09-15**). If the ***tmper*** value is **1-DAY**, the ***montm*** parameter will not be used.
	For the physical pm parameters, if the retrieval command contains a ***mondat*** or ***montm*** which does not include the current date and current time, the system will not return any data (but the command will complete). When the command does target the current date and current time, the actual snapshot will be returned for the targeted physical parameter set, but no ***mondat*** nor ***montm*** will be associated with the returned data.

OUTPUT FORMAT

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

```
   sid date time
M  ctag COMPLD
   "aid:montype,monval,[validity],[tca],[locn],[dirn],tmper,[mondat],
[montm]"
   . . . . .
   . . . . .
   . . . . .
;
```

OUTPUT PARAMETERS

Table 3-217 **RTRV-PM** Output Parameters (Sheet 1 of 4)

Parameter Name	Description
aid	Access Identifier. Values: ■ port AID ■ trib AID ■ ALL.
montype	Monitored Parameter Type. See ***montype*** in the input parameters table.
monval	Monitored Value. This contains the measured value of the parameter specified in *montype*. For an STM16 ***modifier***, the system responds with a 0 or 1 to represent ‘good’ or ‘no good’ indication for the **LBCN** parameter value.
validity	This indicates the validity of the PM data for SDH. It may be omitted or have one of the following values:

Table 3-217 **`RTRV-PM`** Output Parameters (Sheet 2 of 4)

Parameter Name	Description	
	■ I-01	Time/date changes to shorter interval or earlier minute, hour, day, month, or year or port unit pack (re)insertion or restart of system controller software (in the middle of an interval) or system/SRC out of service or back to service (cold boot) or system/SRC out of service or back to service (warm boot in the middle of an interval) or PU out of service or back to service.
	■ I-02	Time/date changes to longer interval or earlier minute, hour, day, month, or year or restart of system controller software (at boundary between intervals) or system/SRC out of service or back to service (warm boot at the boundary between intervals).
	■ I-03	PM enable/disable or MON/NMON.
	■ I-08	SW processing error.
	■ I-09	Far-end parameters inhibited due to near-end defects.
	■ I-10	Facility/equipment protection on failure condition.
	■ I-11	PM start changes to shorter interval.
	■ I-12	PM start changes to longer interval.
	■ I-13	Register initialization.
	■ I-14	Detected read error of hardware PM register by software.
	■ I-17	A change in (SDH) SES declaration threshold.
	■ I-18	Automatic Laser Shutdown.
	If *validity* is omitted, the data is valid for that parameter.	

Table 3-217 **`RTRV-PM`** Output Parameters (Sheet 3 of 4)

Parameter Name	Description
tca	Threshold Crossing Alert. Value: ■ TCA — Indicates if threshold has been exceeded. If the value is omitted, it Indicates the data is below the threshold level for that parameter.
locn	Location for which the PM data is monitored. This parameter may have one of the following values: ■ NEND — Near-End PM data is displayed. ■ FEND — Far-End PM data is displayed. This is not applicable to SONET physical and section layers and DS3 line PM.
dirn	Direction of Monitoring. This parameter is applicable only when the modifier is T3. It may be omitted or have one of the following values: ■ IN — Incoming PM to the DS3 facility. ■ OUT — Outgoing PM from the DS3 facility.
tmper	Time Period. This displays PM data for a specified time interval. It may have one of the following values: ■ 15-MIN — This displays PM data in 15-minute intervals. ■ 1-DAY — This displays daily PM data.
mondat	Monitored Date. This displays the beginning date of the interval for which the PM data is to be reported. For both values of *tmper* parameter, the maximum allowable range of valid dates includes the current and previous one day. This parameter may be omitted or have the following value: ■ MM-DD — Month-Day. A leading zero is optional.
montm	Monitored Time. This displays the beginning time of day of the requested PM period that was set by *tmper* parameter. This parameter may be omitted or have one of the following value(s): ■ HOD-MOH — Hour Of Day-Minute Of Hour, where HOD ranges from 0 to 23 and MOH is 0, 15, 30, or 45. A leading zero is optional. For example, 00 means 0.

Table 3-217 **RTRV-PM** Output Parameters (Sheet 4 of 4)

Parameter Name	Description
	Starting in Release 2.0, Values: ■ HOD-MOH — This displays the beginning time of day of the requested PM period that was set by *tmper* parameter. This parameter may be omitted or have one of the following values: Hour Of Day-Minute Of Hour, where HOD ranges from 0 to 23 and MOH is 0, 15, 30, and 45. A leading zero is optional. For example, 00 means 0. If this parameter is omitted, the PM period for the current time will be reported. ■ THOD-TMOH — To Hour Of Day-To Minute Of Hour, where THOD ranges from 0 to 23 and TMOH is 0, 15, 30, and 45. A leading zero is optional. For example, 00 means 0. Parameter grouping is used when displaying THOD-TMOH. For example, 08-15&&09-00 indicates the HOD-MOH and THOD-TMOH of 08-15 and 09-00, respectively. THOD-TMOH of $$-$$ indicates the current Hour Of Day-Minute Of Hour. THOD-TMOH of ##-## indicates the previous 15-min interval. ■ ALL — All applicable beginning times for the given *mondat* value. If the *montm* value provided does not correspond exactly to the network element PM reporting boundary, the value will be rounded up to the next applicable boundary (for example, 09-06 for a 15-minute PM data is rounded up to 09-15). If the *tmper* value is 1-DAY, the *montm* parameter will not be used. For the physical pm parameters, if the retrieval command contains a *mondat* or *montm* which does not include the current date and current time, the system will not return any data (but the command will complete). When the command does target the current date and current time, the actual snapshot will be returned for the targeted physical parameter set, but no *mondat* nor *montm* will be associated with the returned data.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-PM** command by the network element for an STM1:

```
RTRV-PM-stm1:LT-WBM:1-1-f31-ew-05-1-27:123456::rs-n-es,1-up,,,15-min,,
00-00&&08-00;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-f31-ew-05-1-27:rs-n-es,17,,tca,,,15-min,,00-00"
   "1-1-f31-ew-05-1-27:rs-n-es,10,,tca,,,15-min,,00-15"
   . . .
   "1-1-f31-ew-05-1-27:rs-n-es,15,,tca,,,15-min,,08-00"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **RTRV-PM** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response (for a specific product release, some of these conditions might not be applicable):

- The monitor parameter specified is not valid.
- The location specified is not valid.
- The direction specified is not valid.
- The monitored level specified is not valid.
- The time period specified is not valid.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following condition will cause an IENE error response:

- The port specified is not provisioned in the system.

The **INPUT, Data Not Consistent** error response is shown below:

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

The following condition will cause an IDNC error response:

- The monitor parameter specified is not valid for the port specified.

The **Equipage, Not EQuipped** error response is shown below:

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

The following list identifies conditions that will cause an ENEQ error response:

- The port specified is provisioned in the system but is not equipped.
- No PM data is available due to failure of the port being not equipped.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response:

- No PM data is available due to failures other than the port being not equipped.
- The port unit is currently out of service.

The **Status, Working unit FAiled, control hardware failed or missing** error response is shown below:

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

The following condition will cause an SWFA error response:

- The system or SRC is currently out of service.

RELATED TL1 MESSAGES

DLT-TCA-PROF

ED-TCA-PROF

ENT-TCA-PROF

INIT-REG

RTRV-EPM.

RTRV-TCA-ASGNMT

RTRV-TCA-PROF

NAME

RTRV-PMUAT: Retrieve Performance Monitoring Unavailable Time.

The **RTRV-PMUAT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM2

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-PMUAT-*modifier*:*tid*:*aid*:*ctag*::*layer*[,*locn*];

DESCRIPTION

The **RTRV-PMUAT** command is initiated by a user to report the beginning time and ending time of an Unavailable Time (UAT) period. For each layer, the system shall be able to report six recent UAT periods. All of the UAT periods (up to six) will be reported together as a group.

The **RTRV-PMUAT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-218 **RTRV-PMUAT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the **RTRV-PMUAT** command is to act on. Values: ■ **STM1** ■ **STM4** ■ **STM16**

Table 3-218 **RTRV-PMUAT** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **STM64** ■ **STM1E** ■ **VC3** ■ **VC4** ■ **VC44C**.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. Range is supported up to system or shelf level. (See the AID table in OSEG Appendix A.) Values: ■ port AID ■ trib AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
layer	SDH layer. Values: ■ **RS** ■ **MS** ■ **HOVC** ■ **ALL**.
locn	Location for which the UAT is monitored. This parameter may be **NULL** or have one of the following values: ■ **NEND** Near-End PM data is requested (default). ■ **FEND** Far-End PM data is requested. This is not applicable to SDH RS layer. ■ **ALL** All near-end and far-end data is requested. A **NULL** value for this parameter defaults to **NEND**.

OUTPUT FORMAT

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

```
   sid date time
M  ctag COMPLD
   "aid:layer,locn,int1,int2,int3,int4,int5,int6"
;
```

OUTPUT PARAMETERS

Table 3-219 RTRV-PMUAT Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. Values: ■ port AID ■ trib AID ■ ALL.
locn	Location for which the PM data is monitored. This parameter may have one of the following values: ■ NEND — Near-End PM data is displayed. ■ FEND — Far-End PM data is displayed. This is not applicable to SONET physical and section layers and DS3 line PM.
layer	SDH Layer. Values: ■ RS ■ MS ■ HOVC ■ ALL.

Table 3-219 **`RTRV-PMUAT`** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
uat	Unavailable Time. This indicates the begin and end UAT period. Display format is (YYYY-MM-DD-HH-MN-SS&YYYY-MM-DD-HH-MN-SS). ■ DD Day ■ MM Month ■ YYYY Year ■ HH Hour ■ MN Minute ■ SS Seconds.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **`RTRV-PMUAT`** command by the network element:

```
RTRV-PMUAT-STM1:LT-WBM:1-1-f31-ew-05-1-27:RS,NEND;
   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-f31-ew-05-1-27:RS,NEND,1999-01-01-01-01-01&1999-01-01-01-05-
01,1999-01-01-01-01-10&1999-05-01-01-10-15"
;
```

ERROR RESPONSES

In addition to the non-message-specific error responses listed for the **`RTRV-HDR`** command in the **ERROR RESPONSES** section, the following error responses are applicable.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE** then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following list identifies conditions that will cause an IDNV error response:

- The SDH layer specified is not valid.
- The location specified is not valid.

The **INPUT, Entity Not Exists** error response is shown below:

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

The following condition will cause an IENE error response:

- The port specified is not provisioned in the system.

The **Equipage, Not EQuipped** error response is shown below:

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

The following list identifies conditions that will cause an ENEQ error response:

- The port specified is provisioned in the system but is not equipped.
- No UAT data is available due to failure of the port being not equipped.

The **Status, Not in Valid State** error response is shown below:

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

The following list identifies conditions that will cause an SNVS error response:

- No UAT data is available due to failures other than the port being not equipped.
- The port unit is currently out of service.

The **Status, Working unit FAiled, control hardware failed or missing** error response is shown below:

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

The following condition will cause an SWFA error response:

- The system or SRC is currently out of service.

RELATED TL1 MESSAGES

DLT-TCA-PROF

ED-TCA-PROF

ENT-TCA-PROF

INIT-REG

RTRV-PM

RTRV-TCA-ASGNMT

RTRV-TCA-PROF

NAME

RTRV-PRMTR-DATA: Retrieve Parameter Data

The **RTRV-PRMTR-DATA** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

2.

INPUT FORMAT

RTRV-PRMTR-DATA:*tid*::*ctag*::[*amount*];

DESCRIPTION

The **RTRV-PRMTR-DATA** command retrieves information about the databases that are in Non Volatile Memory. Not only is the database identified by its release number, other information such as its state is also given.

The NVM has one partition for the generic. This partition has two directories: one usually contains the previous generic and the other the current generic. The DOWNLOAD option of **CPY-MEM** is used to download new generics to previous NVM. Installation via **APPLY** causes the contents of previous NVM to be installed. Following installation, a “pointer” is changed so that what is identified as current NVM contains the currently executing generic and previous NVM contains the previous generic.

For the database, there are two partitions: current and previous. The **BACKUP** option of **CPY-MEM** is used to copy the database that is in current NVM to a remote file store. The **RESTORE** option copies a database from a remote file store and places it into previous NVM and then installs it as the working database.

The **RTRV-PRMTR-DATA** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-220 RTRV-PRMTR-DATA Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
amount	Amount Of Data To Return. If a value is omitted, then the current (active) generic is returned. Value(s): ■ **ALL** Current, previous

OUTPUT FORMAT

If the **RTRV-PRMTR-DATA** request completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **RTRV-PRMTR-DATA** command. Additional parameters that specifically apply to this command are defined in the **RTRV-PRMTR-DATA** Output Parameters table.

Table 3-221 `RTRV-PRMTR-DATA` Output Parameters

Parameter Name	Description
nvm	Non Volatile Memory Identifier. Values: ■ NVM-A Current NVM Data ■ NVM-B Previous NVM Data.
	If ***amount*** is not equal to **ALL**, then only current NVM data is reported.
spec_block	See the following table for all *spec_block* parameters.

Table 3-222 `RTRV-PRMTR-DATA` *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
backupfile	This parameter indicates the remote location where the backup is stored. Omitted if never backed up. *Backupfile* and *restorefile* formats are described later in this document. The network element will update *backupfile* before the file transfer starts. Thus, both the source (current NVM) and the destination (EMS or CIT) will have the same value for *backupfile.* Example: If current NVM is backed up to filex, then *backupfile* will have the value filex in current NVM and the remote file store. *Backupfile* will be updated whether or not the file transfer was successful.
backuptime	This parameter gives the time and date when the last backup to a remote file store (for example, CIT) finished. Omitted if never backed up. The format is YY-MM-DD HH-MM-SS. The network element will update *backuptime* just before file transfer starts, and then update the value of current NVM's *backuptime* when the backup finishes. This implies the value of *backuptime* contained in *backupfile* at the OS will represent a slightly earlier time than the value contained in current NVM's database. *Backuptime* will be updated whether or not the file transfer was successful.

Table 3-222 `RTRV-PRMTR-DATA` *spec_block* Output Parameters (Sheet 2 of 3)

Parameter Name	Description
priorbackupfile	This parameter indicates the remote location where the next-to-last backup is stored.
priorbackuptime	This parameter gives the time and date when the next-to-last backup to a remote file store finished.
priorrestorefile	This parameter reflects the remote location where the next-to-last restore came.
priorrestoretime	This parameter reflects the time and date when the next-to-last restore from a remote file store finished.
release	The release parameter represents the software release contained in the file. It has the form xx.yy.zz where xx.yy.zz reflects the actual release version number. Example: 01.02.03
restorefile	This parameter reflects the remote location from where the restore came. Omitted if never restored. *Backupfile* and *restorefile* formats are described later in this document. Only database files at the current or previous NVMs will have values for *restorefile*. *Restorefile* will be updated whether or not the file transfer was successful.
restoretime	This parameter reflects the time and date when the last restore from a remote file store finished. Omitted if never restored. The format is YY-MM-DD HH-MM-SS. Only database files at the current or previous NVMs will have values for *restoretime*. *Restoretime* will be updated whether or not the file transfer was successful.
size	The parameter indicates the allocated NVM size in bytes. It is not dynamically updated within the generic until data migration or sw upgrade which may change the budget of NVM space used for database files.
state	State of the database (see the table captioned “Values of the State Output Parameter”).

Table 3-222 **RTRV-PRMTR-DATA** *spec_block* Output Parameters (Sheet 3 of 3)

Parameter Name	Description
tid	Target ID. Indicates the TID that was stored in this NVM. See **RTRV-HDR** for allowable ***tid*** values. Normally, this will be the same as the network element's TID, but inserting an NVM from another network element could produce discrepancies.

When a backup is performed for the database in current NVM, the values of *restoretime*, *restorefile*, *priorbackuptime*, and *priorbackupfile* will not be modified. To be specific, the values that are stored in current NVM, previous NVM, and the destination will not be modified.

Starting in Release 3.0, the constraints pertaining to a backup are changed. When a backup is performed for the database in current NVM:

- No data values in previous NVM will be modified.
- The values of *restoretime*, *restorefile* that are in current NVM will not be modified.
- The values of *backuptime*, *priorbackuptime*, *backupfile* and *priorbackupfile* that are in current NVM will be updated just before the backup starts. This implies the backed up data will have the new times.
- The values of *backuptime*, *priorbackuptime*, *backupfile* and *priorbackupfile* that are in current NVM will be updated again when the backup completes.

Backupfile and *restorefile* have one of the following formats:

- "CIT,*filename*"
- "EMS,*filename*".

The syntax contained in *filename* should be consistent with the file system. For a DOS file system, back slashes (\) should be used. For a UNIX file system, forward slashes (/) should be used.

Because a (\) is interpreted as the escape character, it will be represented in the **RTRV-PRMTR-DATA** output as a double backslash (\\).

When the CIT is used to enter a file name for download, backup, or restore, the craft is not required to enter a double backslash; the CIT software will enter the extra backslash into the TL1 **CPY-MEM** command.

The *state* output parameter describes the state of the database. The following table gives the allowable values for *state*:

Table 3-223 Values of the *state* Output Parameter

State	NVM	Description
CORRUPT	current previously	Unavailable for invocation or execution. For example, corrupted check sum.
FAILED	current previous	The NVM is failed or missing.
INITIAL	current	Nothing in NVM.
INITIAL	previous	Nothing in previous partition of NVM.
INPROGRESS	current	Backup or restore is in progress.
INPROGRESS	previous	Restore is in progress.
PREVIOUS	previous	A previously active database.
RUNNING	current	The currently active generic.

The *normal* (as contrasted with CORRUPT or FAILED) database states of current NVM are: RUNNING and INPROGRESS. Most of the time, its state is equal to RUNNING, signifying that it contains a copy of the database that is currently in use. When writing makes the NVM inaccessible, current NVM will have a database state of INPROGRESS.

The normal database states of previous NVM are: PREVIOUS and INPROGRESS. Most of the time, its state is equal to PREVIOUS, signifying that it contains a copy of the database that was used with the previous generic. When writing makes the NVM inaccessible, previous NVM will have a database state of INPROGRESS.

If an NVM has never contained a database, then the **RTRV-PRMTR-DATA** output for that NVM will consist of “State=INITIAL”.

For example:

```
"NVM-B:State=initial"
```

If an NVM is failed or missing, then **RTRV-PRMTR-DATA** will report only the state output variable for that NVM. *State* will have the value FAILED.

For example, if previous NVM is failed, then the output will include (assuming ***amount*** was specified to be **ALL**):

```
"NVM-B:state=failed"
```

When software is downloaded to previous NVM, the database parameters for NVM-B do not need initialization because they still reflect information pertaining to the currently executing generic.

When software is installed, these parameters will be omitted (initialized to a blank field) for NVM-A which indicates the active NVM data running with installed software:

- *backuptime*
- *restoretime*
- *backupfile*
- *restorefile*
- *priorbackuptime*
- *priorbackupfile*
- *priorrestoretime*
- *priorrestorefile*
- *localbackuptime*
- *localrestoretime*.

EXAMPLE INPUT/OUTPUT

In this example for the **RTRV-PRMTR-DATA** command, current NVM contains a copy of the RUNNING database. The database was last backed up at 9:00 and the backup was to the CIT:

```
RTRV-PRMTR-DATA:LT-WBM::123456;

   LT-WBM 01-06-14 09:45:28
M  123456 COMPLD
   "NVM-A:release=01.02.04,size=8234567,backuptime=01-06-14 09-00-00,
restoretime=,backupfile=\"CIT,\\data\\01_06_01B\",priorrestorefile=,p
riorbackuptime=01-06-14 08-00-00,priorrestoretime=,priorbackupfile=\"
CIT,\\data\\01_06_01A\",restorefile=,state=running,tid=LT-WBM"
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there also apply to the **`RTRV-PRMTR-DATA`** command.

RELATED TL1 MESSAGES

`APPLY`

`CPY-MEM`

`RTRV-PRMTR-SFTWR`

NAME

RTRV-PRMTR-SFTWR: Retrieve Parameter Software

The **RTRV-PRMTR-SFTWR** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

The User Privilege Code (UCFC/UCAL) has been reduced to: S1

COMMAND PRIORITY

2.

INPUT FORMAT

RTRV-PRMTR-SFTWR:*tid*::*ctag*::[*amount*];

DESCRIPTION

The **RTRV-PRMTR-SFTWR** command retrieves information about the software generics that are in Non Volatile Memory. Not only is the generic identified by its release number, other information such as its state is also given.

RTRV-PRMTR-SFTWR can be used to determine what generic is currently executing. It can also be used to determine what generic was previously executing. If a generic was downloaded but not installed, then instead of indicating what was previously executing, the output describes the download.

The NVM has one partition for the generic. This partition has two directories: one usually contains the previous generic and the other, the current generic. The DOWNLOAD option of **CPY-MEM** is used to download new generics to previous NVM. Installation via **APPLY** causes the contents of previous NVM to be installed. Following installation, a “pointer” is changed so that what is identified as current NVM contains the currently executing generic and previous NVM contains the previous generic.

For the database, there are two partitions: current and previous. The **BACKUP** option of **CPY-MEM** is used to copy the database that is in current NVM to a remote file store. The **RESTORE** option copies a database from a remote file store and places it into previous NVM and then installs it as the working database.

The **RTRV-PRMTR-SFTWR** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-224 **RTRV-PRMTR-SFTWR** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
amount	Amount Of Data To Return. If a value is omitted, then the current (active) generic is returned. Value(s): ■ **ALL** Current, previous

OUTPUT FORMAT

If the network element fully complies with the **RTRV-PRMTR-SFTWR** command, then the following normal completion response is returned if the ***amount*** is specified to be **ALL**:

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

OUTPUT PARAMETERS

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

Table 3-225 **`RTRV-PRMTR-SFTWR`** Output Parameters

Parameter Name	Description
nvm	Non Volatile Memory Identifier. Values: ■ NVM-A — Current NVM software ■ NVM-B — Previous NVM software. If ***amount*** is not equal to **ALL**, then only current NVM software is reported.
spec_block	See the following table for all *spec_block* parameters.

Table 3-226 **`RTRV-PRMTR-SFTWR`** *spec_block* Output Parameters

Parameter Name	Description
delivered	Date and time when the download finished. The format is YY-MM-DD HH-MM-SS.
installed	Date and time when the installation started. The format is YY-MM-DD HH-MM-SS.
meta	Details about the file structure.
path	The source of the download. See below for the format of the *path* parameter.
release	The release parameter represents the software release contained in the file. It has the form xx.yy.zz where xx.yy.zz reflects the actual release version number. Example: 01.02.03.
size	Program size in bytes.
state	State of the program (see the following table entitled “Values of the *State* Output Parameter”).
supplier	Supplier of generic. Lucent.
type	See the *systype* parameter in **`ACT-USER`** for the values of this parameter.

If an NVM has never contained a software generic, then the **RTRV-PRMTR-SFTWR** output for that NVM will consist of “State=INITIAL.”

For example:

```
"NVM-B:State=initial"
```

If an NVM is failed or missing, the **RTRV-PRMTR-SFTWR** output for that NVM will consist of “State=FAILED.”

For example, if previous NVM is failed, then the output will include (assuming ***amount*** was specified to be **ALL**):

```
"NVM-B:State=failed"
```

If an NVM is corrupt, the **RTRV-PRMTR-SFTWR** output for that NVM will consist of “State=CORRUPT.”

Even if some of the information in NVM is available (for example, the generic ID), the output will consist only of a single line indicating that the NVM is corrupt.

A failed NVM might inadvertently be diagnosed as being corrupt, or vice versa.

The *path* parameter has one of the following formats:

- “CIT,*psel*,*ssel*,*tsel*,*nsap*,*filename*”
- “EMS,*psel*,*ssel*,*tsel*,*nsap*,*filename*”
- “LUCENT” It occurs in the current NVM for the initial factory-delivered generic. It indicates the generic in SEC was shipped from Lucent.)

The sizes for psel, etc., are as follows:

- psel (path selector): 0-4 bytes (0-8 hex characters)
- ssel (session selector): 0-4 bytes (0-8 hex characters)
- tsel (transport selector): 0-16 bytes (0-32 hex characters)
- nsap (network session): 20 bytes (40 hex characters).

There can only be an even number of hex characters since they are generated from bytes and each byte corresponds to 2 hex characters.

From MSB to LSB, these bytes are (the number in parenthesis equals the number of bytes): IDP(3), DFI(1), ORG(3), RES(2), RD(2), AREA(2), SYS(6), SEL(1). The SEL field of the NSAP is also called the NSEL.

The syntax contained in *filename* should be consistent with the file system. For a DOS file system, back slashes (\) should be used. For a UNIX file system, forward slashes (/) should be used.

Because a (\) is interpreted as the escape character, it will be represented in the **`RTRV-PRMTR-SFTWR`** output as a double backslash (\\).

When the CIT is used to enter a file name for download, backup, or restore, craft personnel are not required to enter a double backslash; the CIT software will enter the extra backslash into the TL1 **`CPY-MEM`** command.

To use the FTP to FTAM gateway on the NCC for file transfers, the *filename* must be in the FTP file format: ftp://[login]:[password]@[directory address]. For security reasons, the [password] portion of the FTP file format must be masked prior to generating the **`RTRV-PRMTR-SFTWR`** output.

The state output parameter describes the state of the generic. The following table gives the allowable values for *state*.

Table 3-227 Values of the *state* Output Parameter

State	NVM	Description
CORRUPT	current previous	Unavailable for invocation or execution, for example, corrupted check sum.
DOWNLOADED	previous	Ready for installation.
FAILED	current previous	NVM is failed or missing.
INITIAL	current	Nothing in NVM.
INITIAL	previous	Nothing in previous partition of NVM.
INPROGRESS	current	Installation is in progress.
INPROGRESS	previous	Download is in progress.
PREVIOUS	previous	Previously executing generic. Available for installation.
RUNNING	current	Currently executing generic.

The *normal* (as contrasted with CORRUPT or FAILED) states of current NVM are: RUNNING and INPROGRESS. The state is usually equal to RUNNING, signifying that it contains a copy of the generic that is currently executing. For a brief period when an installation is in progress, current NVM will have a state of INPROGRESS. This state is brief because the installation process forces a reset which terminates communications with the network element. When communications resume, current NVM will have a state of RUNNING.

The normal states of previous NVM are: INPROGRESS, DOWNLOADED, and PREVIOUS. INPROGRESS means that a download is in progress. When the download terminates successfully, the state transitions to DOWNLOADED. This state implies that a generic has been downloaded, but it has not been installed. When the generic is installed, the NVM pointer is adjusted, and the NVM partition then identified as previous NVM will have the state set to PREVIOUS.

The *meta* information will indicate the NVM's *fssize* and *freeblocks* in number of blocks. *Blocksize* will define the size of a block. These parameters are defined as:

- *fssize*: The file system size in number of blocks.
- *freeblocks*: The number of free, available blocks remain in this file system.
- *blocksize*: The number of bytes in a block for this file system.

What else is displayed as part of the *meta* information is discretionary. The format of that output is not fixed; it might change from release to release.

EXAMPLE INPUT/OUTPUT

The following example shows a **`RTRV-PRMTR-SFTWR`** command. The example shows the normal condition - current NVM has a copy of the executing program, and previous NVM has a copy of the previous generic. Also, it was assumed that the CIT is DOS based and EMS UNIX based. This was done to illustrate the different formats for path. Notice that current and previous NVM indicate the same number for free (and also unavailable) space since current and previous information is stored in the same physical NVM.

```
RTRV-PRMTR-SFTWR:LT-WBM::123456::ALL;

   LT-WBM 01-06-14 09:35:28
M  123456 COMPLD
   "NVM-A:release=01.02.04,size=11423175,supplier=Lucent,type=WaveSta
r_2.5G_10G,delivered=01-06-13 08-00-10,installed=01-06-13 08-45-30,pa
th=\"CIT,01,01,03,39840F80000000000000000008006A11234500,\\wbm\\generic
\\1_2_04.pgm\",state=running,meta=\"fssize=17818,freeblocks=5456,bloc
ksize=512\""
   "NVM-B:release=01.02.03,size=11343236,supplier=Lucent,type=WaveSta
r_2.5G_10G,delivered=01-06-09 18-30-10,installed=01-06-09 22-45-30,pa
th=\"EMS,01,01,02,39840F80000000000000000008006A11118500,/wbm/generic/1
_2_03.pgm\",:state=previous,meta=\"fssize=17112,freeblocks=6162,block
size=512\""
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-PRMTR-SFTWR** command.

RELATED TL1 MESSAGES

APPLY

CPY-MEM

RTRV-PRMTR-DATA

NAME

RTRV-PROTN-ACC: Retrieve Protection Access

The **RTRV-PROTN-ACC** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-PROTN-ACC:*tid*:*aid*:*ctag*::*protype*[,*nuttype*][,*timeslot*];

DESCRIPTION

The **RTRV-PROTN-ACC** command retrieves the NUT (non-preemptible unprotected traffic) information of a BLSR ring.

The **RTRV-PROTN-ACC** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-228 **RTRV-PROTN-ACC** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. For each protection group type, ***aid*** must be a **protection group AID**. See ***protype*** for a list of the protection group types.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-228 **`RTRV-PROTN-ACC`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
protype	Protection Type. Value(s): ■ **2F** (starting in Release 4).
nuttype	■ **LOCAL** Retrieve Local NUT parameters. ■ **OPER** Retrieve operational NUT parameters. ■ **ALL** Retrieve Local and Operational NUT parameters (Default).
timeslot	Timeslot number for which the attribute is retrieved. Omission of this parameter results in retrieval for all timeslots. Values: ■ **1** … **192**.

OUTPUT FORMAT

If the network element fully complies with the **`RTRV-PROTN-ACC`** command, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

The output parameters in the normal completion response are specified in the **OUTPUT PARAMETERS** section of the **`RTRV-HDR`** command.

Table 3-229 `RTRV-PROTN-ACC` Output Parameters

Parameter	Description
aid	Access Identifier. *aid* is a protection group AID**.** See the AID table in OSEG Appendix A.
nuttype	This is the type of retrieved protection attributed of the addressed timeslot. Values: ■ LOCAL — Local NUT parameters ■ OPER — Operational NUT parameters.
spec_block	See the table below for all the *spec_block* parameters.

Table 3-230 `RTRV-PROTN-ACC` *spec_block* Parameters (Sheet 1 of 2)

Parameter	Description/PROTYPE	Value
net	Network Element Title. This is the name of the node that has his *nutatr* set to not-protected/non-preemptible. Note: If two or more nodes have the same timeslot set to (Temp) Not Protected, then only one is indicated.	Values: ■ Target Identifier. — Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter ■ NONE — No node has requested this timeslot to be non-preempt.
nutatr	This is the protection attribute of the addressed timeslot.	Values: ■ PROT — protected ■ NOTPR — not protected ■ TNOTP — temp not protected ■ PREE — preemptible ■ NPREE — not preemptible ■ TNPRE — temp not preemptible

Table 3-230 **RTRV-PROTN-ACC** *spec_block* Parameters (Sheet 2 of 2)

Parameter	Description/PROTYPE	Value
timeslot	Timeslot number for which the attribute is set.	Values: ■ 1 … 192

EXAMPLE INPUT/OUTPUT

The following example retrieves the non-preemptible unprotected traffic (NUT) attribute of a 2F BLSR protection group:

```
RTRV-PROTN-ACC:LT-WBM:1-1-t11:123456::2F,OPER;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-t11,OPER:nutatr=TNPRE,net=LT-WBM-1,timeslot=1"
   ...
   "1-1-t11,OPER:nutatr=TNPRE,net=NONE,timeslot=192"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **ENT-PROTN-GRP** command.

RELATED TL1 MESSAGES

ED-PROTN-ACC

NAME

RTRV-PROTN-GRP: Retrieve Protection Group

The **RTRV-PROTN-GRP** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-PROTN-GRP:*tid*:[*aid*]:*ctag*::*protype*,[*rid*];

Starting in Release 2.1, **RTRV-PROTN-GRP** has the following input format:

RTRV-PROTN-GRP:*tid*:[*aid*]:*ctag*::*protype*,[*rid*],[*ppgname*];

DESCRIPTION

The **RTRV-PROTN-GRP** command retrieves protection group information. The information is retrieved for the groups that have been created via **ENT-PROTN-GRP** and also for groups that were automatically created by the system. This is equivalent to saying **RTRV-PROTN-GRP** retrieves protection group information for all groups that can be edited via **ED-PROTN-GRP**.

Input parameters for **RTRV-PROTN-GRP** identify the type of protection group that is of interest and also a specific member (or perhaps a range of members) of that protection group. If the specified member does not belong to a protection group, then the command returns COMPLD, but contains no information about the protection group. This means that the AID is unprotected.

The **RTRV-PROTN-GRP** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-231 `RTRV-PROTN-GRP` Input Parameters (Sheet 1 of 3)

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. If ***rid*** is specified, then ***aid*** can be omitted. For each protection group type, ***aid*** can be a **protection group AID**. See ***protype*** for a list of the protection group types. For some protection group types, a range of values can be specified for ***aid***. Also, for some protection groups, ***aid*** is not constrained to be a protection group AID. Details for each specific protection group type are given below. A range of AIDs can be specified for the following types: ■ **ALL**: *bay-shelf*-all (starting in Release 3) ■ **1+1**: *bay-shelf*-oall (starting in Release 1) ■ **2F**: *bay-shelf*-tall (starting in Release 1) ■ **1xNOPT**: *bay-shelf*-nall (starting in Release 3) ■ **PATHDRI:** *bay-shelf-#-#-slot-port*-all (starting in Release 1) Starting in Release 2.0, *slot* and *port* can also have the value all. Non-protection group AIDs can be specified for the following types: ■ **1+1**: port AID (starting in Release 1) ■ **2F**: port AID (starting in Release 1) ■ **1xNOPT**: port AID (starting in Release 3) ■ **EQPTTMG**: circuit pack AID ■ **EQPTSWFBR**: circuit pack AID ■ **PATHDRI**: Input tributary AID (starting in Release 2.1). Input tributary AID is only allowed if a ***ppgname*** is supplied as well. But AID is optional if ***ppgname*** is supplied.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

Table 3-231 **`RTRV-PROTN-GRP`** Input Parameters (Sheet 2 of 3)

Parameter Name	Description
ppgname	Path Protection Group Name (Starting in Release 2.1). This parameter can only be specified for path protection groups. If ***protype*** is not equal to **PATHDRI**, then the command will be DENY'd with IDNV. If an input value is specified for ***ppgname*** and none is specified for ***aid,*** then **`RTRV-PROTN-GRP`** operates on all protection groups that have the specified path protection group name. If input values are specified for ***aid*** and ***ppgname***, then **`RTRV-PROTN-GRP`** operates on all protection groups that have the specified ***aid, ppgname*** pair. The command will complete successfully if there is no protection group described by ***aid***, ***ppgname***, but no data will be returned. Storage and retrieval of the ***ppgname*** is case sensitive, but actual use of the ***ppgname*** to determine the corresponding protection group is case insensitive. It is an alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes. The value of ***ppgname*** is set when **`ENT-CRS`** is used to establish the connections for the path protection group.
protype	Protection Type. Values: ■ **ALL** (starting in Release 3) ■ **1+1** (starting in Release 1) 1+1 is for optical protection. ■ **2F** (starting in Release 1) ■ **1xNOPT**: port AID (starting in Release 3) ■ **PATHDRI** (starting in Release 1) DRI/Path Protection Group refers to a protection group which is autonomously established at the creation of a path-protected cross connection. The protection group is comprised of a working and a protection leg, each of which is identified by the designated source tributaries. The protection group itself is identified by the destination tributary. ■ **1xNELEC** ■ **EQPTTMG** ■ **EQPTSWFBR** Switch fabric protection. This protection type refers to the switch packs.

Table 3-231 **`RTRV-PROTN-GRP`** Input Parameters (Sheet 3 of 3)

Parameter Name	Description
rid	Ring Identification Name. Storage and retrieval of the ***rid*** is case sensitive, but actual use of the ***rid*** to determine the corresponding protection group is case insensitive. Value: ASCII string of up to 15 characters from the TID character set. If this parameter is specified, then the output will contain information about the protection group(s) associated with that ***rid***. If ***aid*** is specified, then ***rid*** can be omitted. This parameter is applicable for the following ***protype*** values: ■ **2F** (starting in Release 1) Starting in Release 3.0, the value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).

OUTPUT FORMAT

The following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid[,CML]:[spec_block]"
       ...
       ...
   "aid[,CML]:[spec_block]"
;
```

If the entity specified by ***aid*** is not a member of a protection group, but does exist, then the following response is returned. This means that the AID is unprotected.

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

Note: specifying a protection group type constrains the type of AID that can belong to that group. For example, a port AID cannot be a member of an

1xNELEC protection group. If the AID type and protection group type are inconsistent, then **RTRV-PROTN-GRP** may be DENY'd.

OUTPUT PARAMETERS

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

Table 3-232 **RTRV-PROTN-GRP** Output Parameters

Parameter Name	Description
aid	Protection group AID. If the input AID is not in a protection group, then no *spec_block* parameter values will be printed. This means that the AID is unprotected. Since the protection group ID (pgid) is part of the protection group AID, the pgid will not be returned as a separate parameter.
CML	Starting in Release 1, when the input specifies ***protype*** as **PATHDRI** (or **CONSTITUENTPATH** if applicable), then CML (Constituent Member List) is used to indicate that the output line describes a constituent member of a path DRI. Variable-rate tributaries may have more than one CML output line while fixed-rate tributaries only have one. A CML output line will have the following format (the order of the *spec_block* parameters is not important): "aid,CML:actunit=*actunit*,actunitaid=*actunitaid*,cst=*cst*,swreq=*swreq*, protnsiglvl=*protnsiglvl*,wkgsiglvl=*wkgsiglvl*""aid,CML:actunit=actunit,actunitaid=actunitaid,cst=cst,swreq=sw Some of the parameters listed above may not be available in a specific release. See the individual parameter descriptions for details. In addition to the parameters that are returned as a CML output line for **PATHDRI**, the following parameters are returned as the first output line: *dripathn*, *hte*, *protype*, *rme*, *wkg*, *protn*. Some of these parameters may not be available in a specific release. See the individual parameter descriptions for details.
spec_block	See the following table for all *spec_block* parameters.

Table 3-233 **RTRV-PROTN-GRP** *spec_block* Parameters (Sheet 1 of 12)

Parameter	Description/PROTYPE	Value
actunit	Active Unit State. This parameter is applicable to the following *protype**s***:	

Table 3-233 **RTRV-PROTN-GRP** *spec_block* Parameters (Sheet 2 of 12)

Parameter	Description/PROTYPE	Value
	■ 1+1 (starting in Release 1) ■ PATHDRI (starting in Release 1) ■ EQPTTMG ■ EQPTSWFBR	WKG, PROTN WKG, PROTN 0, 1 0, 1
actunitaid	Active Unit AID. This parameter is applicable to the following *protypes*: ■ PATHDRI (starting in Release 1)	logical tributary AID
actunitfe	Far-End Incoming Req Selection. This parameter is applicable to the following *protype(s)*: ■ 1+1 (starting in Release 1).	WKG, PROTN, NONE, INVALID
actunitne	Near-End Outgoing Req Selection. This parameter is applicable to the following *protype(s)*: ■ 1+1 (starting in Release 1).	WKG, PROTN, NONE
adjppl	Adjunct Path Protection List. This parameter is applicable to the following *protype(s)*: ■ PATHDRI (starting in Release 2.1). The adjuncts are identified via their output AID.	Ampersand (&) separated list of logical trib aids
aps	Far-End Incoming APS Message. This parameter is applicable to the following *protype(s)*:	

Table 3-233 `RTRV-PROTN-GRP` *spec_block* Parameters (Sheet 3 of 12)

Parameter	Description/PROTYPE	Value
	■ 1+1 (starting in Release 1). Some values may not be available for a particular release.	For the rows below, the first entry is the value, the second a description. DNR Do Not Revert EXER Exerciser INV Invalid SD Signal Degrade FS Forced Switch LP Lockout of Protection MS Manual Switch NR No Request RR Reverse Request SF Signal Fail SF-H Signal Fail SF-L Signal Fail SD Signal Degrade SD-L Signal Degrade SD-H Signal Degrade WTR Wait to restore
	■ 1xNOPT (starting in Release 3)	See 1+1 values.
apsout	Near-End Outgoing APS Message. This parameter is applicable to the following *protype(s)*:	
	■ 1+1 (starting in Release 1).	See *aps*. (INV does not apply.)
	■ 1xNOPT (starting in Release 3)	See *aps*. (INV does not apply.)
apspn	APS Protection Switch Profile Name. This parameter is applicable to the following *protypes*:	
	■ 1+1 (starting in Release 3)	profile name
	■ 1xNOPT (starting in Release 3).	profile name
blsrpn	BLSR Protection Switch Profile Name. This parameter is applicable to the following *protypes*:	
	■ 2F (starting in Release 3)	profile name

Table 3-233 `RTRV-PROTN-GRP` *spec_block* Parameters (Sheet 4 of 12)

Parameter	Description/PROTYPE	Value
cp0	The member 0 of an equipment protection group. This parameter is applicable to the following *protypes*:	
	■ EQPTTMG	circuit pack AID
	■ EQPTSWFBR	circuit pack AID (note 1)
cp1	The member 1 of an equipment protection group.	See *cp0*.
cst	Constituent Signal Type. This parameter is applicable to the following *protypes*:	Some values may not be applicable for a particular release.
	■ PATHDRI	STS1, STS3C, STS12C, STS48C. VC3, VC4, VC44C, VC416C
dcclm-sprotmd	DCC Line/MS Protection Mode. Starting in Release 3, this parameter is applicable to the following *protype(s)*:	DISABLE is the initial value.
	■ 1+1 (starting in Release 3).	ENABLE, DISABLE
	■ 1xNOPT (starting in Release 3)	ENABLE, DISABLE
dccsr-sprotmd	DCC Sect/RS Protection Mode. Starting in Release 3, this parameter is applicable to the following *protype(s)*:	DISABLE is the initial value.
	■ 1+1 (starting in Release 3).	ENABLE, DISABLE
	■ 1xNOPT (starting in Release 3)	ENABLE, DISABLE
dripathpn	DRI/Path Protection Switch Profile Name. This parameter is applicable to the following *protype(s)*:	
	■ PATHDRI (starting in Release 3).	profile name
eapschst	East Incoming APS Message, Channel Status. This parameter is applicable to the following *protypes*:	For the rows below, the first entry is the value; the second, a description.

Table 3-233 RTRV-PROTN-GRP *spec_block* **Parameters (Sheet 5 of 12)**

Parameter	Description/PROTYPE	Value
	■ 2F (starting in Release 1)	IDLE Idle BRIDGED Bridged BANDS Bridged & Switched XTRFC Extra Traffic NOTUSED Not Used RDIL RDI-L AISL AIS-L
eapsdnid	East Incoming APS Message, Destination nid. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 1)	0-15
eapsprotn	East Incoming APS Message, Protection. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 1)	0, 1 Short, Long
eapssnid	East Incoming APS Message, Source nid.	See *eapsdnid.*
eapssw	East Incoming APS Message, Switch Priority. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 1) Some values may not be available for a particular release.	For the rows below, the first entry is the value; the second, a description. LPS LP - Span SFP SF - Prot FSS FS- Span FSR FS - Ring SFS SF - Span SFR SF - Ring SDP SD - Prot SDS SD - Span SDR SD - Ring MSS MS - Span MSR MS - Ring WTR Wait to Restore EXERS Exerciser - Span EXERR EX-Ring RRS Reverse Request - Span RRR RR - Ring NR No Request.

Table 3-233 **`RTRV-PROTN-GRP`** *spec_block* Parameters (Sheet 6 of 12)

Parameter	Description/PROTYPE	Value
east	East Group Member. This parameter is applicable to the following *protype(s)*: ■ 2F (starting in Release 1).	 port AID
elprotnsw	East Last Protection Switch Attempt. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 1)	 SUCCESS, DENY, FAILURE
eswreq	East Switch Request State. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 1) Some values may not be available for a particular release.	For the rows below, the first entry is the value; the second, a description. LPA LP - All Spans LPS LP - Span LSR LS - Ring FSR FS - Ring SFR SF - Ring SDR SD - Ring MSR MS - Ring WTR Wait to Restore EXERR EX - Ring RRR RR - Ring NR No Request
hte	Holdoff Timer Enable. This parameter is applicable to the following *protype(s)*: ■ PATHDRI (starting in Release 1).	The initial value is determined by the value of *ppbv* as set via **`ENT-CRS`**. ENABLE, DISABLE
htmr	Holdoff timer. This parameter is applicable to the following *protypes*: ■ 1+1 (starting in Release 3)	 0-100 (units are deci-seconds, or one-tenth of a second). 0 is the initial value. For example, a value of 55 means 5.5 sec-onds. The maximum value is 10.0 seconds.

Table 3-233 **RTRV-PROTN-GRP** *spec_block* Parameters (Sheet 7 of 12)

Parameter	Description/PROTYPE	Value
	■ 1xNOPT (starting in Release 3).	0-100 (units are deci-seconds, or one-tenth of a second). 0 is the initial value. For example, a value of 55 means 5.5 seconds. The maximum value is 10.0 seconds.
lckactst	Lockout Active Status. This parameter is applicable to the following *protype(s)*: Only circuit packs in the lockout state are included in the list. If the protection pack is locked out, then it is included in the list. Other switch request state information is conveyed via *swreq*.	
	■ 1xNELEC.	circuit pack aid (note 1)
nutgran	NUT granularity. This parameter is applicable to the following *protype(s)*:	
	■ 2F (starting in Release 4)	UNKNOWN, NUT_NOT_IMPLEMENTED, STS1, VC3, STS3, VC4, STS12, VC44C STS48, VC416C
pgrate	Protection Group Rate. This parameter is applicable to the following *protypes*:	Some values may not be applicable for a particular release.
	■ 1+1 (starting in 1)	OC3, OC12, OC48, OC192, STM1, STM4, STM16, STM64
	■ 2F (starting in Release 1)	OC48, OC192, STM16, STM64
	■ 1xNOPT (starting in Release 3)	See 1+1.

Table 3-233 **RTRV-PROTN-GRP** *spec_block* Parameters (Sheet 8 of 12)

Parameter	Description/PROTYPE	Value
ppgname	Path Protection Group Identification Name. Storage and retrieval of the *ppgname* is case sensitive, but actual use of the *ppgname* to determine the corresponding protection group is case insensitive. This parameter is applicable to the following *pro-type(s)*:	
	■ PATHDRI (starting in Release 2.1).	ASCII string of up to 24 characters from the TID character set
protn	Protection Group Member. This parameter is applicable to the following *protypes*:	
	■ 1+1 (starting in Release 1)	port AID
	■ 1xNOPT (starting in Release 3)	port AID
	■ PATHDRI (starting in Release 1)	logical tributary AID
	■ 1xNELEC	circuit pack AID
	■ A value of \"\" denotes an empty value.	\"\"
protnsiglvl	Signal Level of Protection Group Member.	See *wkgsiglvl*.
protocol	Protocol. 1+1 optical protection groups can have one of the following protocols: unidirectional (1+1_UNI), bidirectional (1+1_BIDIR), or optimized bidirectional (1+1_OPTM). One or more of these protocols may not be available for a specific product's release. A similar parameter, *ilpod*, applies to the 1xNOPT protection switch type. This parameter is applicable to the following *pro-type(s)*:	
	■ 1+1 (starting in Release 1). Some values may not be available for a particular release.	1+1_UNI, 1+1_BIDIR
	■ 1+1 (starting in Release 2.1)	1+1_OPTM
	■ 1xNOPT (starting in Release 3)	1xN_UNI, 1xN_BIDIR

Table 3-233 **`RTRV-PROTN-GRP`** *spec_block* Parameters (Sheet 9 of 12)

Parameter	Description/PROTYPE	Value
protype	Protection Type. This parameter is applicable to the following *protypes*:	
	Starting in Release 1:	1+1
	Starting in Release 1:	2F
	Starting in Release 3:	1xNOPT
	Starting in Release 1:	PATHDRI
		1xNELEC
		EQPTTMG
		EQPTSWFBR
prounit	Protected Unit. The circuit pack that is being protected. This parameter is applicable to the following *protype(s)*:	
	■ 1xNOPT (starting in Release 3)	WKG1…WKG12, NONE, INVALID
	■ 1xNELEC.	circuit pack AID
prounitfe	Far-End Protected Unit req selection. This parameter is applicable to the following *protype(s)*:	
	■ 1xNOPT (starting in Release 3).	WKG1…WKG12, NONE, INVALID
prounitne	Near-End Protected Unit req selection. This parameter is applicable to the following *protype(s)*:	
	■ 1xNOPT (starting in Release 3).	WKG1…WKG12, NONE, INVALID
rid	Ring Identification Name. Storage and retrieval of the *rid* is case sensitive, but actual use of the *rid* to determine the corresponding protection group is case insensitive. This parameter is applicable to the following *protypes*:	
	■ 2F (starting in Release 1)	ASCII string of up to 15 characters from the TID character set.

Table 3-233 **`RTRV-PROTN-GRP`** *spec_block* Parameters (Sheet 10 of 12)

Parameter	Description/PROTYPE	Value
	Starting in Release 3.0.	The value can also be a quoted text string of up to 15 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).
ringndst	Ring Node APS State. This parameter is applicable to the following *protypes*:	
	■ 2F (starting in Release 1)	IDLE, SWITCHING, PASSTHROUGH, SUSPENDED-IDLE, SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH
rme	Revertive Mode Enable. This parameter is applicable to the following *protypes*:	
	■ 1+1 (starting in Release 1)	ENABLE, DISABLE. The initial value is DISABLE.
	■ PATHDRI (starting in Release 1).	ENABLE, DISABLE. The initial value is determined by the value of ***ppbv*** as set via **`ENT-CRS`**.
	■ 1xNOPT (starting in Release 3)	ENABLE. 1XN Opt is always enabled.
ssi	Secondary Section Indication. This parameter is applicable to the following *protype(s)*:	
	■ 1+1 (*protocol*: 1+1_OPTM).	WKG, PROTN
swreq	Switch Request State. This parameter is applicable to the following *protypes*:	
	■ 1+1	LO, FS, SF, SD, MS, NR, WTR, DNR, FOP
	■ 1xNOPT (starting in Release 3)	See next table.

Table 3-233 RTRV-PROTN-GRP *spec_block* Parameters (Sheet 11 of 12)

Parameter	Description/PROTYPE	Value
	■ PATHDRI (starting in Release 1)	See next table.
	■ 1xNELEC	See next table. Note: The presence or absence of Lockout is indicated via *lckactst*.
	■ EQPTTMG	See next table.
	■ EQPTSWFBR	See next table.
wapschst	West Incoming APS Message, Channel Status.	See *eapschst*.
wapsdnid	West Incoming APS Message, Destination nid.	See *eapsdnid*.
wapsprotn	West Incoming APS Message, Protection.	See *eapsprotn*.
wapssnid	West Incoming APS Message, Source nid.	See *eapssnid*.
wapssw	West Incoming APS Message, Switch Priority.	See *eapssw*.
west	West Group Member.	See *east*.
wkg	Working Group Member. This parameter is applicable to the following *protypes*:	
	■ 1+1 (starting in Release 1)	port AID
	■ PATHDRI (starting in Release 1)	logical tributary AID
	■ 1xNELEC	circuit pack AID (note 1)
	■ A value of \"\" denotes an empty value.	\"\"
wkg1... wkg12	Working Group Member. These parameters are applicable to the following *protype(s)*:	
	■ 1xNOPT (starting in Release 3). Starting in Release 3 N=1, so the list can only contain one member *wkg1*.	port AID
wkgsiglvl	Signal Level of wkg. This parameter is applicable to the following *protypes*:	
	■ 1+1 (starting in Release 1)	SF, SD, NONE
	■ PATHDRI (starting in Release 1)	SF, SD, NONE

Table 3-233 `RTRV-PROTN-GRP` *spec_block* Parameters (Sheet 12 of 12)

Parameter	Description/PROTYPE	Value
wsigl1... *wsigl12*	Signal Level of wkgs. These parameters are applicable to the following *protype*:	
	■ 1xNOPT (starting in Release 3).	SF, SD, NONE
	Starting in Release 3 allowed value is N=1, so the list of parameters can only contain one signal level of the working group member.	
wlprotnsw	West Last Protection Switch Attempt.	See *elprotnsw*.
wswreq	West Switch Request State.	See *eswreq*.
wtr	Wait to Restore. This parameter is applicable to the following *protypes*:	
	Starting in Release 4.0, the value 99 representing infinity is no longer supported.	
	■ 1+1 (*protocol*: 1+1_UNI, 1+1_BIDIR))	0-60 and 99. The units of *wtr* are minutes.
	■ 2F (starting in Release 1)	0-12 and 99.
	■ 1xNOPT (starting in Release 3)	0-12 and 99.
	■ 1xNELEC.	0-12 and 99 (which represents infinity). The units of *wtr* are minutes.
wtr	Wait to Rename. This parameter is applicable to the following *protype(s)*:	
	■ 1+1 (*protocol*: 1+1_OPTM).	0-60. The units of *wtr* are minutes.

Note 1: The output will consist of an ampersand (&) separated list of entities.

EXAMPLE INPUT/OUTPUT

The following example retrieves 1xNELEC protection group information for bay 1, shelf 1:

```
RTRV-PROTN-GRP:LT-WBM:1-1-eds3ec1grp:123456::1xnelec;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-eds3ec1grp:protype=1xnelec,wkg=1-1-#-#-01-cp&1-1-#-#-03-cp&
1-1-#-#-06-cp,protn=1-1-#-#-eprn-cp,swreq=nr,wtr=5"
;
```

The following example retrieves 1+1 optical protection group information for bay 1, shelf 1:

```
RTRV-PROTN-GRP:LT-WBM:1-1-o01:123456::1+1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-o01:protype=1+1,wkg=1-1-#-#-13-1,protn=1-1-#-#-14-1,actunit=
wkg,aps=nr,swreq=nr,wtr=5"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-PROTN-GRP** command.

RELATED TL1 MESSAGES

DLT-PROTN-GRP

ED-PROTN-GRP

ED-PROTN-TYPE

ENT-PROTN-GRP

RTRV-PROTN-TYPE

NAME

RTRV-PROTN-LST: Retrieve Protection Group List

The **RTRV-PROTN-LST** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-PROTN-LST:*tid*:*aid*:*ctag*::[*protype*];

DESCRIPTION

The **RTRV-PROTN-LST** command retrieves a list of all protection groups that exist for a specified shelf. A protection type can be specified to limit the response to just one specific type.

The **RTRV-PROTN-LST** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-234 **RTRV-PROTN-LST** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. Value: ■ shelf AID A range of shelves is not permitted.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-234 **`RTRV-PROTN-LST`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
protype	Protection Type. If a value is not specified for ***protype***, then a list of all protection groups for the specified shelf will be returned. Values: ■ **1+1** ■ **2F** ■ **1xNOPT** (starting in Release 3) ■ **PATHDRI** (starting in Release 1) ■ **EQPTTMG** ■ **EQPTSWFBR**

OUTPUT FORMAT

The following normal completion response is returned:

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

If the input specified a value for ***protype*** and the shelf has no protection groups of that type, then the command returns COMPLD.

OUTPUT PARAMETERS

Refer to the **`RTRV-HDR`** command **OUTPUT PARAMETERS** section for a normal completion response. The parameters listed there also apply to the **`RTRV-PROTN-LST`** command.

Table 3-235 **RTRV-PROTN-LST** Output Parameters

Parameter Name	Description
aid	Protection group AID.
spec_block	See the following table for all *spec_block* parameters.

Table 3-236 **RTRV-PROTN-LST** *spec_block* Parameters (Sheet 1 of 2)

Parameter	Description / PROTYPE	Value
cp0	The member 0 of an equipment protection group. This parameter is applicable to the following *protypes*:	
	■ EQPTTMG	circuit pack AID
	■ EQPTSWFBR	circuit pack AID
cp1	The member 1 of an equipment protection group.	See *cp0*.
east	East Group Member. This parameter is applicable to the following *protype(s)*:	
	■ 2F.	port AID
protn	Protection Group Member. This parameter is applicable to the following *protypes*:	
	■ 1+1	port AID
	■ 1xNOPT (starting in Release 3)	port AID
	■ PATHDRI (starting in Release 1)	logical tributary AID
	■ 1xNELEC	circuit pack AID
	■ A value of \"\" denotes an empty value.	\"\"
protype	Protection type.	
		1+1
		2F
		1xNOPT
		PATHDRI

Table 3-236 **RTRV-PROTN-LST** *spec_block* Parameters (Sheet 2 of 2)

Parameter	Description / PROTYPE	Value
		EQPTTMG EQPTSWFBR
west	West Group Member.	See *east*.
wkg	Working Group Member. This parameter is applicable to the following *protypes*: ■ 1+1 ■ 1xNELEC ■ PATHDRI (starting in Release 1) ■ A value of \"\" denotes an empty value.	 port AID circuit pack AID (note 1) logical trib AID \"\"
wkg1… wkg12	Working Group Member. This parameter is applicable to the following *protype(s)*: ■ 1xNOPT (starting in Release 3).	 port AID

Note 1: The output will consist of an ampersand (&) separated list of entities.

EXAMPLE INPUT/OUTPUT

The following example retrieves 1xNELEC protection group information for bay 1, shelf 1:

```
RTRV-PROTN-LST:LT-WBM:1-1:123456::1xnelec;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-eds3ec1grp:protype=1xnelec,wkg=1-1-#-#-01-cp&1-1-#-#-03-cp&
1-1-#-#-06-cp,protn=1-1-#-#-eprn-cp"
;
```

The following example retrieves 1+1 optical protection group information for bay 1, shelf 1:

```
RTRV-PROTN-LST:LT-WBM:1-1:123456::1+1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-o01:protype=1+1,wkg=1-1-#-#-13-1,protn=1-1-#-#-14-1"
   "1-1-o21:protype=1+1,wkg=1-1-#-#-03-1,protn=1-1-#-#-04-1"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-PROTN-LST** command.

RELATED TL1 MESSAGES

DLT-PROTN-GRP

ED-PROTN-GRP

ENT-PROTN-GRP

RTRV-PROTN-GRP

NAME

RTRV-PROTN-PPG: Retrieve Path Protection Group names

The **RTRV-PROTN-PPG** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-PROTN-PPG:*tid*::*ctag*;

DESCRIPTION

The **RTRV-PROTN-PPG** command retrieves information about all path protection groups that have path protection group names. For each named path protection group, the name and the input ports of the protection group are retrieved. The retrieve spans the entire network element. The output is sorted by path protection group name.

The value of the name (*ppgname*) is set when **ENT-CRS** is used to establish the connections for the path protection group. This value can be modified by **ED-PROTN-GRP**. Path protection group names can be used by **OPR-PROTNSW** and **RLS-PROTNSW** to operate on all path protection groups that have a specified path protection group name.

The **RTRV-PROTN-PPG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-237 **RTRV-PROTN-PPG** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

The following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   ":available=ppgnmavl
   ":ppgname,aid & aid & aid ... "
       ...
       ...
   ":ppgname,aid & aid & aid ... "

;
```

If there are no path protection group names defined for the network element, then the command returns COMPLD with a single line indicating the number of available names.

OUTPUT PARAMETERS

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

Table 3-238 `RTRV-PROTN-PPG` Output Parameters

Parameter Name	Description
ppgnmavl	Number of available protection group names. The network element has a limited number of protection group names. This parameter indicates how many are left.
ppgname	Path Protection Group Name.
aid	Input port AID for the protection groups that are identified by *ppg-name*. An ampersand (&) separated list of port AIDs.

The values for *ppgname* and *aid* are established via the **ENT-CRS** command when path-protected cross connections are specified. *aid* values correspond to the port AID values that are imbedded in ***in_aid*** and ***in_aid2***. There can be more than two values in the *aid* list because **ENT-CRS** can be used to assign the same *ppgname* to more than one path protection group.

The output lines are alphabetically ordered according to the *ppgname* field.

EXAMPLE INPUT/OUTPUT

The following example retrieves information about two path protection group names.

```
RTRV-PROTN-PPG:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   ":available=8"
   ":ppgname1,1-1-t04-e-08-1,1-1-u-#-06-1"
   ":ppgname2,1-1-t02-e-06-1,1-1-u-#-04-1"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-PROTN-PPG** command.

RELATED TL1 MESSAGES

ED-PROTN-GRP

ENT-CRS

OPR-PROTNSW

RLS-PROTNSW

RTRV-PROTN-GRP

NAME

RTRV-PROTN-TYPE: Retrieve Protection Group Type

The **RTRV-PROTN-TYPE** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-PROTN-TYPE:*tid*::*ctag*::*protype*;

DESCRIPTION

The **RTRV-PROTN-TYPE** command retrieves parameters of the protection group type. The parameters retrieved are the ones that have a common value for that protection type. As an example, the "wait to restore time" for all protection groups of protection type PATHDRI have a common value for "wait to restore time." **RTRV-PROTN-TYPE** is related to the command **ED-PROTN-TYPE**. Any parameter that can be modified by **ED-PROTN-TYPE** is retrieved by **RTRV-PROTN-TYPE**. See the **ENT-PROTN-TYPE** command for a description of protection groups.

The **RTRV-PROTN-TYPE** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-239 **RTRV-PROTN-TYPE** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV-PROTN-TYPE** request completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

Table 3-240 **RTRV-PROTN-TYPE** Output Parameters

Parameter Name	Description
protype	Protection Type. Value(s): ■ PATHDRI.
spec_block	See the following table for all *spec_block* parameters.

Table 3-241 **RTRV-PROTN-TYPE** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
plhtmr	Path Level Holdoff Timer. This parameter is only applicable when *protype* is PATHDRI. Values: ■ 0-100 (steps of 100 ms, implying 10 sec range).
plwtr	Path Level Wait-To-Restore. This parameter is only applicable when *protype* is PATHDRI.

Table 3-241 **`RTRV-PROTN-TYPE`** *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
	Values: ■ 0-12. The dimensions of *plwtr* are minutes.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **`RTRV-PROTN-TYPE`** command by the network element:

```
RTRV-PROTN-TYPE:LT-WBM::123456::PATHDRI;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "PATHDRI:plwtr=2,plhtmr=10"
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there also apply to the **`RTRV-PROTN-TYPE`** command.

RELATED TL1 MESSAGES

`DLT-PROTN-GRP`

`ED-PROTN-GRP`

`ED-PROTN-TYPE`

`ENT-PROTN-GRP`

`OPR-PROTNSW`

`RLS-PROTNSW`

`RTRV-PROTN-GRP`

NAME

RTRV-rr: Retrieve rr

The **RTRV-rr** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

Table 3-242 Syntax of RTRV-rr

Command Syntax
RTRV-ALL :*tid:aid:ctag*; (starting in Release 1)
RTRV-STM1 :*tid:aid:ctag*; (starting in Release 1)
RTRV-STM1E :*tid:aid:ctag*; (starting in Release 1)
RTRV-STM4 :*tid:aid:ctag*; (starting in Release 2)
RTRV-STM16 :*tid:aid:ctag*; (starting in Release 1)
RTRV-STM64 :*tid:aid:ctag*; (starting in Release 1)
RTRV-T3 :*tid:aid:ctag*; (starting in Release 2)
RTRV-VC3 *:tid:aid:ctag*; (starting in Release 1)

DESCRIPTION

The **RTRV-rr** command can be used to retrieve all parameters related to optical and electrical ports, and to retrieve tributary parameters. For external input/output timing reference port status, see the **RTRV-SYNCN** command.

The **RTRV-rr** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-243 **RTRV-rr** Input Parameters

rr	Parameter Name	Description
	tid	Target Identifier. Refer to **RTRV-HDR** command for input parameter syntax and description of this parameter.
ALL	***aid***	Access Identifier (starting in Release 1). Values: ■ port AID ■ tributary AID ■ An AID range is allowed up to the shelf level. See the AID table in OSEG Appendix A.
STM1	***aid***	Access Identifier. Values: ■ port AID of an SDH port ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
STM1E	***aid***	See STM1.
STM4	***aid***	See STM1 (starting in Release 2).
STM16	***aid***	See STM1 (starting in Release 1).
STM64	***aid***	See STM1 (starting in Release 1).
VC3	***aid***	Access Identifier (starting in Release 1). Values: ■ tributary AID of an SDH tributary ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
	ctag	Correlation Tag. Refer to **RTRV-HDR** command for input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV-rr** command completes successfully, then the following normal completion response is returned:

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

The output of **RTRV-ALL** will be the concatenation of all the individual **RTRV-rr** responses that apply.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **RTRV-rr** command. Additional parameters that specifically apply to this command are defined below.

The table that follows describes the output parameters for **ED-STMn**.

Table 3-244 **RTRV-STMn** Output Parameters

rr	Parameter Name	Description
STM1	*aid*	Access Identifier (starting in Release 1). Values: ■ SDH optical port AID ■ An AID range using the ALL keyword is also allowed, but only within one shelf. (See the AID table in OSEG Appendix A.)
STM1E	*aid*	See STM1 (starting in Release 1).
STM4	*aid*	See STM1 (starting in Release 2).
STM16	*aid*	See STM1 (starting in Release 1).
STM64	*aid*	See STM1 (starting in Release 1).
	spec_block	The following are the *spec_block* parameters.

Table 3-245 **`RTRV-STMn`** Output *spec_block* Parameters (Sheet 1 of 13)

rr	Parameter Name	Description
STM64	*als*	Automatic Laser Shutdown (starting in Release 3). Enable/Disable the automatic laser shutdown procedure. ALS procedure switches off the laser during a fiber cut. Values: ■ ENABLE ■ DISABLE (initial value).
STM1	*dccstat*	Regeneration section DCC Status (starting in Release 1.0). This identifies the regeneration section DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 2.0, *dccstat* is obsolete.
STM16	*dccstat*	See STM1 (starting in Release 1.0).
STM64	*dccstat*	See STM1 (starting in Release 1.0).
STM1	*degthr*	Signal Degrade Threshold (starting in Release 2). This is less severe than *dexcthr*, the excessive degrade threshold. Values (as exponents of 10): ■ -5 ■ -6 (initial value10-6) ■ -7 ■ -8 ■ -9.
STM1E	*degthr*	See STM1 (starting in Release 2).
STM4	*degthr*	See STM1 (starting in Release 2).
STM16	*degthr*	See STM1 (starting in Release 2).
STM64	*degthr*	See STM1 (starting in Release 2).

Table 3-245 **`RTRV-STMn`** Output *spec_block* Parameters (Sheet 2 of 13)

rr	Parameter Name	Description
STM1	*dexcthr*	Excessive Degrade Threshold (starting in Release 2). This is more severe than *degthr*, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5.
STM1E	*dexcthr*	See STM1 (starting in Release 2).
STM4	*dexcthr*	See STM1 (starting in Release 2).
STM16	*dexcthr*	See STM1 (starting in Release 2).
STM64	*dexcthr*	See STM1 (starting in Release 2).
STM1	*emi*	EBER ignored for AIS insertion. This parameter controls the contribution of EBER to AIS insertion. If *emi* has a value of TRUE, then EBER will be ignored in the AIS insertion algorithm. That is, TRUE corresponds to disabling the consideration of EBER. Values: ■ TRUE (initial value) ■ FALSE.
STM1E	*emi*	See STM1 (starting in Release 1).
STM4	*emi*	See STM1 (starting in Release 2).
STM16	*emi*	See STM1 (starting in Release 1).
STM64	*emi*	See STM1 (starting in Release 1).
STM1	*exprstrc*	Expected Regenerator Section Trace Identifier (starting in Release 2.1). Value: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. (An example of a byte is 6D.) The length is set with the *strcxfmt* parameter.
STM1E	*exprstrc*	See STM1 (starting in Release 3).
STM4	*exprstrc*	See STM1 (starting in Release 3).
STM16	*exprstrc*	See STM1 (starting in Release 3).
STM64	*exprstrc*	See STM1 (starting in Release 3).

Table 3-245 **`RTRV-STMn`** Output *spec_block* Parameters (Sheet 3 of 13)

rr	Parameter Name	Description
STM1	*faclpbkstat*	Facility Loopback Status (starting in Release 3). Values: ■ NO (initial value) ■ NSF Near-Side Facility loopback for electrical/optical ports ■ FSF Far-Side Facility loopback for electrical/optical ports.
STM1E	*faclpbkstat*	See STM1 (starting in Release 3).
STM4	*faclpbkstat*	See STM1 (starting in Release 3).
STM16	*faclpbkstat*	See STM1 (starting in Release 3).
STM64	*faclpbkstat*	See STM1 (starting in Release 3).
STM64	*fec*	FEC Enable (starting in Release 1). Values: ■ ENABLE (initial value) ■ DISABLE.
STM64	*feccor*	FEC Correction Enable (starting in Release 1). Values: ■ ENABLE (initial value) ■ DISABLE.
STM64	*fectype*	FEC Type (starting in Release 2). Values: ■ INBAND (initial value) ■ OUTBAND.
STM1	*femspm*	Far-End Multiplex Section PM Enable (starting in Release 1). Values: ■ ENABLE ■ DISABLE (initial value).
STM1E	*femspm*	See STM1 (starting in Release 2).
STM4	*femspm*	See STM1 (starting in Release 2).
STM16	*femspm*	See STM1 (starting in Release 1).

Table 3-245 `RTRV-STMn` Output *spec_block* Parameters (Sheet 4 of 13)

rr	Parameter Name	Description
STM64	*femspm*	See STM1 (starting in Release 1).
STM1	*frcdus*	Force DUS for sync messaging on optical interfaces (starting in Release 3). When provisioned for ENABLE, the message “do not use” will be transmitted from that optical interface. Values: ■ ENABLE ■ DISABLE (initial value).
STM4	*frcdus*	See STM1 (starting in Release 3).
STM16	*frcdus*	See STM1 (starting in Release 2.1).
STM64	*frcdus*	See STM1 (starting in Release 2.1).
STM1	*inputsig*	Tributary Input Signal Rate List. This parameter is a list of VCn rates across the port's bandwidth. This parameter is not reported if the port is in adaptive mode. Values: NX-NX-NX… where N is the number of Xs. X can be 3, 4, or 4C representing VC3, VC4, or VC4-4C. Example: an STM-16 signal might be represented by 93-14-14C-243 which implies 9 VC3s, 1 VC4, 1 VC4-4C, 24 VC3s. The representation is not unique; for example, it could also be 33-63-14-14C-243. If *trbmd* is FIXED, then *inputsig* constrains the cross-connection rates that can be entered for the port. If *trbmd* is ADAPTIVE, then *inputsig* has no effect. Starting in Release 2, X may have the value 16C which represents VC-4-16C.
STM1E	*inputsig*	See STM1 (starting in Release 1).
STM4	*inputsig*	See STM1 (starting in Release 2).
STM16	*inputsig*	See STM1 (starting in Release 1).
STM64	*inputsig*	See STM1 (starting in Release 1).
STM64	*laser*	Provisioned laser state (starting in Release 3). Values: ■ OFF ■ ON (initial value).

Table 3-245 **RTRV-STMn** Output *spec_block* Parameters (Sheet 5 of 13)

rr	Parameter Name	Description
STM64	*laseractl*	Actual laser state (starting in Release 3). Values: ■ OFF ■ ON ■ ON2SECONDS ■ ON90SECONDS.
STM1	*ldccstat*	Line DCC Status (starting in Release 1.0). This identifies the multiplex section DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 2.0, *ldccstat* is obsolete.
STM16	*ldccstat*	See STM1 (starting in Release 1.0).
STM64	*ldccstat*	See STM1 (starting in Release 1.0).
STM1	*msdeg*	Multiplex Section DEG Threshold (starting in Release 1.0). Values (as exponents of 10): ■ -4 ■ -5 ■ -6 (initial value10-6) ■ -7 ■ -8 ■ -9. The parameter *msdeg* is replaced in Release 2 by *degthr*.
STM1E	*msdeg*	See STM1 (starting in Release 1.0).
STM4	*msdeg*	See STM1 (starting in Release 1.0).
STM16	*msdeg*	See STM1 (starting in Release 1.0).
STM64	*msdeg*	See STM1 (starting in Release 1.0).

Table 3-245 `RTRV-STMn` Output *spec_block* Parameters (Sheet 6 of 13)

rr	Parameter Name	Description
STM1	*msdexc*	Multiplex Section DEXC Threshold (starting in Release 1.0). Values: (as exponents of 10) ■ -3 (initial value10-3) ■ -4 ■ -5. The parameter *msdexc* is replaced in Release 2 by *dexcthr*.
STM1E	*msdexc*	See STM1 (starting in Release 1.0).
STM4	*msdexc*	See STM1 (starting in Release 1.0).
STM16	*msdexc*	See STM1 (starting in Release 1.0).
STM64	*msdexc*	See STM1 (starting in Release 1.0).
STM64	*oatasc*	OAT Association (starting in Release 3). It indicates the OAT that is associated with this port. Value: ■ slot AID. ■ NONE
STM1	*opdis*	Optical Distance (starting in Release 1). It shows the type of application for which the optical transmitter on this port is suited. Values: ■ INTRA-OFFICE ■ SHORT-HAUL ■ LONG-HAUL ■ OLS_400G ■ OLS_PASSIVE ■ OLS_80G. If the circuit pack has been pre-provisioned (via **`ENT-EQPT`**), but the pack is not present in the slot then this parameter will not be present in the retrieved data.
STM4	*opdis*	See STM1 (starting in Release 2).
STM16	*opdis*	See STM1 (starting in Release 1).
STM64	*opdis*	See STM1 (starting in Release 1).

Table 3-245 `RTRV-STMn` Output *spec_block* Parameters (Sheet 7 of 13)

rr	Parameter Name	Description
STM1	*opwl*	Optical Wavelength (starting in Release 1) in nanometers. It shows the type of optics that is used on this port. If the circuit pack has been pre-provisioned (via **`ENT-EQPT`**), but the pack is not present in the slot then this parameter will not be present in the retrieved data.
STM4	*opwl*	See STM1 (starting in Release 2).
STM16	*opwl*	See STM1 (starting in Release 1).
STM64	*opwl*	See STM1 (starting in Release 1).
STM16	*phypm*	See STM64 (starting in Release 2.1).
STM64	*phypm*	Physical PM Enable (starting in Release 2.1). This parameter indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE (initial value) ■ DISABLE.
STM16	*phytca*	*phytca* See STM64 (starting in Release 2.1).
STM64	*phytca*	*phytca* Physical TCA (starting in Release 2.1). This parameter points a PM physical TCA profile name to the designated AID. Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value). Starting in Release 3.0, the Default0 profile will be changed to NotReported.
STM1	*pmmsfeses*	Performance Monitoring Multiplex Section Far-End SES Threshold (starting in Release 1). Values (as a percentage): 0 - 100 at increments of 5. Initial value: 15. The values are a percentage of the maximum number of bit errors. As an example for STM-1, there can be a maximum number of 24 bit errors per frame. Using this number and the fact there are 8000 frames per second, implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E	*pmmsfeses*	See STM1 (starting in Release 2).

Table 3-245 `RTRV-STMn` Output *spec_block* Parameters (Sheet 8 of 13)

rr	Parameter Name	Description
STM4	*pmmsfeses*	See STM1 (starting in Release 2).
STM16	*pmmsfeses*	See STM1 (starting in Release 1).
STM64	*pmmsfeses*	See STM1 (starting in Release 1).
STM1	*pmmsneses*	Performance Monitoring Multiplex Section Near-End SES Threshold (starting in Release 1). Values (as a percentage): 0 - 100 at increments of 5. Initial value: 15. The values are a percentage of the maximum number of bit errors. As as example for STM-1, there can be a maximum number of 24 bit errors per frame. Using this number and the fact there are 8000 frames per second, implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E	*pmmsneses*	See STM1 (starting in Release 2).
STM4	*pmmsneses*	See STM1 (starting in Release 2).
STM16	*pmmsneses*	See STM1 (starting in Release 1).
STM64	*pmmsneses*	See STM1 (starting in Release 1).
STM1	*pmode*	This parameter sets the mode of the port (starting in Release 1). Values: ■ AUTO (initial value) Indicates that, when a signal is detected at the port, then alarm monitoring will start. ■ MON Indicates that alarm monitoring is taking place on the port. ■ NMON Means that alarm monitoring is not occurring on the port.
STM1E	*pmode*	See STM1 (starting in Release 1).
STM4	*pmode*	See STM1 (starting in Release 2).
STM16	*pmode*	See STM1 (starting in Release 1).
STM64	*pmode*	See STM1 (starting in Release 1).

Table 3-245 **`RTRV-STMn`** Output *spec_block* Parameters (Sheet 9 of 13)

rr	Parameter Name	Description
STM1	*pmrsneses*	Performance Monitoring Regenerator Section Near-End SES Threshold (starting in Release 1). Values (as a percentage): 0 - 100 at increments of 5. Initial value: 30. The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
STM1E	*pmrsneses*	See STM1 (starting in Release 2).
STM4	*pmrsneses*	See STM1 (starting in Release 2).
STM16	*pmrsneses*	See STM1 (starting in Release 1).
STM64	*pmrsneses*	See STM1 (starting in Release 1).
STM1	*ptype*	Port Type (starting in Release 1). This identifies the port type of the AID. Values: ■ STM1 ■ STM1E ■ STM4 ■ STM16 ■ STM64.
STM1E	*ptype*	See STM1 (starting in Release 1).
STM4	*ptype*	See STM1 (starting in Release 2).
STM16	*ptype*	See STM1 (starting in Release 1).
STM64	*ptype*	See STM (starting in Release 1).
STM1	*rsmstca*	RS/MS TCA Profile Pointer (starting in Release 2). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value). Starting in Release 3.0, the Default0 profile will be changed to NotReported.
STM1E	*rsmstca*	See STM1 (starting in Release 2).
STM4	*rsmstca*	See STM1 (starting in Release 2).

Table 3-245 **`RTRV-STMn`** Output *spec_block* Parameters (Sheet 10 of 13)

rr	Parameter Name	Description
STM16	*rsmstca*	See STM1 (starting in Release 2).
STM64	*rsmstca*	See STM1 (starting in Release 2).
STM1	*rsnemspm*	Regenerator Section/Near-End Multiplex Section PM (starting in Release 1). Values: ■ ENABLE (initial value) ■ DISABLE.
STM1E	*rsnemspm*	See STM1 (starting in Release 2).
STM4	*rsnemspm*	See STM1 (starting in Release 2).
STM16	*rsnemspm*	See STM1 (starting in Release 1).
STM64	*rsnemspm*	See STM1 (starting in Release 1).
STM1	*rstimmon*	Regenerator Section Trace Identifier Mismatch Monitor enable (starting in Release 3). Values: ■ ENABLE ■ DISABLE (initial value).
STM1E	*rstimmon*	See STM1 (starting in Release 3).
STM4	*rstimmon*	See STM1 (starting in Release 3).
STM16	*rstimmon*	See STM1 (starting in Release 3).
STM64	*rstimmon*	See STM1 (starting in Release 3).
STM1	*sdhpn*	SDH Alarm Severity Assignment Profile (starting in Release 1). This parameter retrieves the SDH ASAP profile name to which the designated AID points. Value: ■ Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
STM1E	*sdhpn*	See STM1 (starting in Release 1).
STM4	*sdhpn*	See STM1 (starting in Release 2).
STM16	*sdhpn*	See STM1 (starting in Release 1).
STM64	*sdhpn*	See STM1 (starting in Release 1).

Table 3-245 **`RTRV-STMn`** Output *spec_block* Parameters (Sheet 11 of 13)

rr	Parameter Name	Description
STM1	*strc*	Section Trace (starting in Release 3). This parameter shows the value of the Section Trace Identifier on the incoming section overhead J0 byte of a tributary. Values: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). D] The system determines the number of characters to be displayed. That number is recorded in the *strcrfmt* parameter which can be displayed by **`RTRV-rr`**, but not set by **`ED-rr`**. If a value for this parameter is not available, the *strcrfmt* will return the value UNAVAILABLE and the last available value may be returned as a value or the parameter may be omitted from the output.
STM1E	*strc*	See STM1 (starting in Release 3).
STM4	*strc*	See STM (starting in Release 3).
STM16	*strc*	See STM (starting in Release 3).
STM64	*strc*	See STM (starting in Release 3).
STM1	*strcrfmt*	Starting in Release 3, the read format of J0, the incoming section trace (*strc*). This format is determined by the system, it cannot be set via **`ED-rr.`** Values: ■ 1 (initial value) One byte value. A single byte (hexadecimal format). ■ 16 16-byte hexadecimal format using T.50 character set, with the first byte being a CRC-7. ■ UNAVAILABLE No valid incoming section trace is available.
STM1E	*strcrfmt*	See STM1 (starting in Release 3).
STM4	*strcrfmt*	See STM1 (starting in Release 3).
STM16	*strcrfmt*	See STM1 (starting in Release 3).
STM64	*strcrfmt*	See STM1 (starting in Release 3).

Table 3-245 `RTRV-STMn` Output *spec_block* Parameters (Sheet 12 of 13)

rr	Parameter Name	Description
STM1	*strcwfmt*	Starting in Release 3, the Write Format of J0, the Outgoing Section Trace (*strcout*). Values: ■ 1 (initial value) One byte value - a single byte (hexadecimal format). ■ 16 16-byte hexadecimal format using T.50 character set, with the first byte being a CRC-7.
STM1E	*strcwfmt*	See STM1 (starting in Release 3).
STM4	*strcwfmt*	See STM1 (starting in Release 3).
STM16	*strcwfmt*	See STM1 (starting in Release 3).
STM64	*strcwfmt*	See STM1 (starting in Release 3).
STM1	*strcxfmt*	Starting in Release 3, the format of the expected section trace (*exprstrc*). Values: ■ 1 (initial value) One byte value - a single byte (hexadecimal format). ■ 2 In support of ETSI “mode 2" - a single byte value 01hex, which is the value of J0 when it was still called C1. (this is the default value) ■ 16 16-byte hexadecimal format using T.50 character set, with the first byte being a CRC-7.
STM1E	*strcxfmt*	See STM1 (starting in Release 3).
STM4	*strcxfmt*	See STM1 (starting in Release 3).
STM16	*strcxfmt*	See STM1 (starting in Release 3).
STM64	*strcxfmt*	See STM1 (starting in Release 3).

Table 3-245 RTRV-STMn Output *spec_block* Parameters (Sheet 13 of 13)

rr	Parameter Name	Description
STM1	*strcout*	Outgoing Section Trace. This identifies the section trace message to be transmitted. Beginning with Release 3, the value is: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). The length is set with the *strcwfmt* parameter. See *strcwfmt* for the initial value of strcout.
STM1E	*strcout*	See STM1 (starting in Release 3).
STM4	*strcout*	See STM1 (starting in Release 3).
STM16	*strcout*	See STM1 (starting in Release 3).
STM64	*strcout*	See STM1 (starting in Release 3).
STM1	*unequiposig*	Tributary Unequipped Output Signal Rate List (starting in Release 1). This parameter is a list of VCn rates across the port's bandwidth. It determines the rate(s) of the “unequipped” signal that will be transmitted if there is no cross connection. This parameter is not reported if the port is in adaptive mode. Values: See *inputsig*.
STM1E	*unequiposig*	See STM1 (starting in Release 1).
STM4	*unequiposig*	See STM1 (starting in Release 2).
STM16	*unequiposig*	See STM1 (starting in Release 1).
STM64	*unequiposig*	See STM1 (starting in Release 1).

The table that follows describes the output parameters for **RTRV-VC3.** The **RTRV-VC3** command is also applicable to VC4 tributaries. Even though a VC4 signal is not a concatenated VC3 signal in a strict sense, from a pointer processor viewpoint, it can be considered to be comprised of three VC3 signals which have the properties of a concatenated signal. Thus, it is not necessary to have a separate RTRV command for VC4. Similarly, **RTRV-VC3** is also applicable to VC4-4C and other “concatenated” tributaries.

The **rr** column identifies the **RTRV-rr** command.

Even if the command is used for a concatenated signal, it can be applied to any of the tributaries (for example, to the second tributary of the concatenated signal).

However, only the parameters pertaining to the first tributary of a concatenated signal are used by the software to determine system operation. If the signal were changed from a concatenated signal to non concatenated, then the parameters for each of the tributaries would be used by the software.

Table 3-246 **`Tributary`** Output Parameters

rr	Parameter Name	Description
VC3	*aid*	Access Identifier (starting in Release 1). Values: ■ tributary AID of an SDH tributary ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
	spec_block	The following are the *spec_block* parameters.

Table 3-247 **`Tributary`** Output *spec_block* Parameters (Sheet 1 of 5)

rr	Parameter Name	Description
VC3	*brstintvl*	Bursty Interval (starting in Release 2.1). Measurement period for determining bursty errors. See *brstthr.* Values: ■ 2 to 10 (seconds). Initial value: 7.
VC3	*brstthr*	Bursty Error Threshold (starting in a Release 2.1). Threshold value for bursty errors. Values (as a percentage): 0 - 100 at increments of 5. Initial value: 30.
VC3	*crslpbkstat*	Cross-Connection Loopback Status (starting in Release 1). Values: ■ YES ■ NO.

Table 3-247 **`Tributary`** Output *spec_block* Parameters (Sheet 2 of 5)

rr	Parameter Name	Description
VC3	*degthr*	Path BER Threshold (starting in Release 2). Values: (as exponents of 10) ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9.
VC3	*dexcthr*	Excessive Degrade Threshold (starting in Release 2). This is more severe than *degthr*, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5.
VC3	*exphptrc*	Expected HP Trace (J1) Identifier. Values: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). The length is set with the *hptrcxfmt* parameter.
VC3	*hptimmon*	High Order Path Trace (J1) Identifier Mismatch (TIM) Monitor Enable (starting in Release 3). Values: ■ ENABLE ■ DISABLE (initial value).

Table 3-247 **`Tributary`** Output *spec_block* Parameters (Sheet 3 of 5)

rr	Parameter Name	Description
VC3	*hptrcxfmt*	Starting in Release 3, the Format of J1, the Expected Incoming High Order Path Trace (*exphptrc*). Values: ■ 1 One byte value - a single byte containing provisioned value (hexadecimal format). ■ 2 (initial value) In support of ETSI “mode 2" - a single byte with unspecified contents. ■ 16 16-byte hexadecimal format using T.50 character set, with the first byte using a CRC-7. ■ 64 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed.
VC3	*msdeg*	Multiplex Section DEG Threshold (starting in Release 1.0). Values: (as exponents of 10) ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9. The parameter *msdeg* is replaced in Release 2 by *degthr*.
VC3	*msdexc*	Multiplex Section DEXC Threshold (starting in Release 1.0). Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5. The parameter *msdexc* is replaced in Release 2 by *dexcthr*.
VC3	*pmhpfeses*	Higher-Order Path Far-End SES Threshold (starting in Release 2.1). Values: See *pmhpneses*.

Table 3-247 **`Tributary`** Output *spec_block* Parameters (Sheet 4 of 5)

rr	Parameter Name	Description
VC3	*pmhpneses*	Higher-Order Path Near-End SES Threshold (starting in Release 2.1). Values (as a percentage): 0 - 50 at increments of 5 Initial value: 30 The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
VC3	*ppm*	Path PM Enable (starting in Release 2.1). It indicates if this performance monitoring feature is enabled or disabled. It applies to both near-end and far-end PM. Values: ■ ENABLE ■ DISABLE (initial value).
VC3	*ptca*	Path TCA Profile Pointer (starting in Release 2.1). Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default0”. Starting in Release 3.0, the Default0 profile will be changed to NotReported.
VC3	*ptrc*	Path Trace. This parameter shows the value of the Path Trace Identifier on the incoming path overhead J1 byte of a non-terminated tributary. Value: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D) The length displayed is set with the *ptrcrfmt* parameter. The length of the transmitted path trace, may be different from the displayed length. If the received trace is smaller than indicated by *ptrcrfmt*, then it is padded with zeros; if longer, then it is truncated. If a value for this parameter is not available, the *ptrcrfmt* will return the value UNAVAILABLE and the last available value may be returned as a value or the parameter may be omitted from the output.

Table 3-247 **`Tributary`** Output *spec_block* Parameters (Sheet 5 of 5)

rr	Parameter Name	Description
VC3	*ptrcrfmt*	Starting in Release 1, the Read Format of J1, the Incoming Path Trace (*ptrc*). Values: ■ 1 (initial value) One byte value - a single byte (hexadecimal format using the printable T.50/ASCII character set). ■ 16 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. ■ 64 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed. ■ UNAVAILABLE - No valid incoming path trace is available.
VC3	*tmonmd*	Tributary Monitoring Mode (starting in Release 1). This parameter indicates the mode of the tributary. Values: ■ MON Indicates that alarm monitoring is taking place on the port. ■ NMON (initial value) Means that alarm monitoring is not occurring on the port .
VC3	*tribsdhpn*	Tributary Alarm Severity Assignment Profile (starting in Release 1). This parameter points a tributary ASAP profile name to the designated AID. Value: ■ Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-rr** command:

```
RTRV-STS1:LT-WBM:1-1-u-#-16-8-1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-16-8-1:pmode=mon,tribsonetpn=hot,ptca=att,ppm=enable,
ptrc=766D61...,siglb=01"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ED-rr

RTRV-SYNCN

SET-SYNCN

NAME

RTRV-STATE-EQPT: Retrieve State Equipment

The **RTRV-STATE-EQPT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1 and P2

Beginning with Release 2.0, the user privilege code is:
User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-STATE-EQPT:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-STATE-EQPT** command retrieves the state information for equipment in the network element.

The **RTRV-STATE-EQPT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-248 **RTRV-STATE-EQPT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. Values: ■ system AID ■ shelf AID The keyword “all” is allowed in the AID.

Table 3-248 **`RTRV-STATE-EQPT`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ slot AID — The keyword “all” is allowed in the AID. ■ circuit pack AID — The keyword “all” is allowed in the AID.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **`RTRV-STATE-EQPT`** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

Table 3-249 **`RTRV-STATE-EQPT`** Output Parameters

Parameter Name	Description
aid	Access Identifier. See the AID table in OSEG Appendix A.
spec_block	See the following table for all *spec_block* parameters.

Table 3-250 **RTRV-STATE-EQPT** *spec_block* Output Parameters (Sheet 1 of 4)

Parameter Name	Description
avlst	Availability Status. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID. Values: ■ NOT_INSTALLED The circuit pack has a “circuit pack unequipped” alarm. ■ OFFLINE The circuit pack is out of service. ■ IN_TEST The circuit pack is under test. ■ FAILED The circuit pack has a circuit pack failure alarm. ■ FAILED_AND_OFFLINE The circuit pack has a fault and is automatically excluded from service. ■ DEPENDENCY The circuit pack is disabled because an associated circuit pack is disabled. ■ NULL None of the listed values apply.
eqptst	Equipment Status. This parameter is available starting in Release 3. Values: ■ IS ■ OOS. This parameter is reported for a circuit pack AID.
flaccp	Flashdisk Acceptability. This parameter is available starting in Release 1. This parameter is reported for a memory circuit pack AID (including SYS50DM). Values: ■ ENABLE ■ DISABLE.
flequp	Flashdisk Equipage. This parameter is available starting in Release 1. This parameter is reported for a memory circuit pack AID (including SYS50DM). Values: ■ EMPTY ■ VALID.

Table 3-250 **RTRV-STATE-EQPT** *spec_block* Output Parameters (Sheet 2 of 4)

Parameter Name	Description
holdst	Holder Status. This parameter is available starting in Release 1. This parameter is reported for a slot AID. Values: ■ EMPTY — There is no circuit pack currently in the slot. This is the initial value. ■ VALID — The slot contains a circuit pack with the latch closed and the circuit pack is contained in the slot's acceptable circuit pack list. ■ UNEXPECTED — A circuit pack is in the slot with the latch closed, the circuit pack is in the slot's acceptable circuit pack list, but the slot is provisioned or pre-provisioned for another type of valid circuit pack. ■ ILLEGAL — The slot contains a circuit pack with the latch closed, but the pack is not in the slot's acceptable circuit pack list. ■ UNKNOWN — The slot contains a circuit pack with the latch open.
mcond	Maintenance Condition. This parameter is available starting in Release 1. This parameter is reported for a system AID. Values: ■ Y ■ N.
opstate	Operational State. This parameter is available starting in Release 1. Values: ■ ENABLE ■ DISABLE. This parameter is reported for a circuit pack AID.

Table 3-250 **RTRV-STATE-EQPT** *spec_block* Output Parameters (Sheet 3 of 4)

Parameter Name	Description
procst	Procedural Status. This parameter is available starting in Release 1. This parameter is reported for all circuit packs. Values: ■ INITIALIZING The circuit pack is currently executing its start-up procedure. ■ NOT_INITIALIZED The circuit pack start-up procedure cannot complete. ■ INIT_REQUIRED The circuit will be initialized when the "include" command is received. ■ TERMINATING The circuit pack is being turned off. ■ NULL None of the above values apply.
provst	Provisioned State. This parameter is available starting in Release 1. Values: ■ PREPROVISIONED ■ PROVISIONED. This parameter is reported for an I/O shelf AID. This parameter is reported for a circuit pack AID.
sysavst	System Availability Status. This parameter is available starting in Release 2.1. This parameter reports the initialization status of the system. Values: ■ AVAILABLE System has completed initializing and is ready. ■ INITIALIZING System is not available because it is still initializing. ■ FAILEDUNEQ System controller has failed or is unequipped.
utlfrom	Used Intershelf Bandwidth Egress (UIBE). This parameter available starting in Release 1. This parameter is reported for an I/O shelf AID. This parameter is only displayed for a specific I/O shelf; that is, a shelf AID without any “ALL” fields. Values: 0-192.

Table 3-250 **RTRV-STATE-EQPT** *spec_block* Output Parameters (Sheet 4 of 4)

Parameter Name	Description
utlfrom2	Used Intershelf Bandwidth Egress with SWitch EXTension (UIBESWEXT). This parameter is available starting in Release 4. This parameter is reported for an I/O shelf AID. This parameter represents the STS-1 equivalent number of intershelf connection bandwidth outputs, in the second block of bandwidth, used in connections on a high speed shelf when a 768SWITCH is present. Where UIBE reports the first block of 192-STS1 equivalents, UIBESWEXT reports the second block in this instance. Values: 0-192.
utlto	Used Intershelf Bandwidth Ingress (UIBI). This parameter is available starting in Release 1. This parameter is reported for an I/O shelf AID. This parameter is only displayed for a specific I/O shelf; that is, a shelf AID without any “ALL” fields. Values: 0-192.
utlto2	Used Intershelf Bandwidth Ingress with SWitch EXTension (UIBISWEXT). This parameter is available starting in Release 4. This parameter is reported for an I/O shelf AID. This parameter represents the STS-1 equivalent number of intershelf connection bandwidth inputs, in the second block of bandwidth, used in connections on a high speed shelf when a 768SWITCH is present. Where UIBI reports the first block of 192-STS1 equivalents, UIBISWEXT reports the second block in this instance. Values: 0-192.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-STATE-EQPT** command:

```
RTRV-STATE-EQPT:LT-WBM:system:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "system:mcond=y,rstmd=y"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-STATE-EQPT** command.

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ED-STATE-EQPT

ENT-EQPT

RTRV-EQPT

NAME

RTRV-SYNCN: Retrieve Synchronization

The **RTRV-SYNCN** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-SYNCN:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

The **RTRV-SYNCN** command displays the provisioning and operational information on the synchronization attributes as set by the **SET-SYNCN** command. It also displays the status of the external timing reference input/output port.

Output reports will vary according to the provisioned timing mode.

The **RTRV-SYNCN** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-251 **RTRV-SYNCN** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-251 **RTRV-SYNCN** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
spec_block	See the following table for all ***spec_block*** parameters. For the following ***spec_block*** parameters: ■ If at least one parameter is given for all parameters that are omitted, no output shall be given. ■ If all parameters are omitted, the outputs for the whole synchronization area shall be given.

Table 3-252 **RTRV-SYNCN** ***spec_block*** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
syncref	Starting with Release 1, this parameter is assigned timing reference AID. Values: ■ **EXTREF1** ■ **EXTREF2** ■ **LINE1** ■ **ALL**. The outputs for all the assigned timing reference AIDs are returned. Starting with Release 2.1, this parameter can also have an additional value. Value(s): ■ **LINE2**. Starting with Release 3.0, all six line references are available and this parameter can also have values: ■ **LINE3** ■ **LINE4** ■ **LINE5** ■ **LINE6**.

Table 3-252 RTRV-SYNCN *spec_block* Input Parameters (Sheet 2 of 2)

Parameter Name	Description
systmg	Starting with Release 1, this parameter refers to system timing AID. Values: ■ **YES** (default) — All output parameters related to system timing are returned. ■ **NO**.
tinpaid	This is timing input port AID. Values: ■ **EXTTMG0** ■ **EXTTMG1** ■ **ALL**.
tinpaid1	Starting with Release 1, this parameter is timing input port AID. Value(s): ■ **EXTTMG0**.
tinpaid2	Starting with Release 1, this parameter is timing input port AID. Value(s): ■ **EXTTMG1**.
toutpaid	Starting with Release 2.1, this parameter is Timing Output Port AID. Values: ■ **EXTTMG0_OUT** ■ **ALL**.

OUTPUT FORMAT

After receiving the **RTRV-SYNCN** command, the following normal system response is returned:

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

OUTPUT PARAMETERS

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

Table 3-253 **RTRV-SYNCN** Output Parameters for Retrieving System Timing

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters. The following *spec_block* parameters are related to retrieve System Timing.

Table 3-254 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving System Timing (Sheet 1 of 6)

Parameter Name	Description
active_oref_stat	Starting in Release 3, this shows the current selected timing reference of the timing link switch for the external output. Values: ■ line1 ■ line2 ■ line3 ■ line4 ■ line5 ■ line6.
active_ref	Active System Timing Reference State. This shows the active timing reference the system clock is currently using for locked mode of timing. Starting in Release 4, the *active_ref* parameter is replaced by the *selected_ref* parameter. *selected_ref* Selected System Timing Reference State. This shows the current selected timing reference of the timing link switch of the system clock. Values: ■ extref1 ■ extref2

Table 3-254 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving System Timing (Sheet 2 of 6)

Parameter Name	Description
	■ line1 ■ line2 (starting in Release 2.1) ■ line3 (starting in Release 3.0) ■ line4 (starting in Release 3.0) ■ line5 (starting in Release 3.0) ■ line6 (starting in Release 3.0)
clkmod	Clock Mode. This parameter indicates the provisioned mode of the system clock. The value FREE-RUNNING means that the system clock uses the internal oscillator as reference. The value LOCKED indicates that the system clock uses the output of the timing link switch as reference. Values: ■ FREE-RUNNING ■ LOCKED.
clkmod_stat	System Clock Mode Status. This parameter indicates the state (operational mode) of the system clock. Values: ■ FREE-RUNNING The network element derives timing from the internal stratum 2 or stratum 3 oscillator. This internal timing is used to time all synchronous outgoing signals. ■ HOLDOVER The system clock is in HOLDOVER mode of operation. ■ LOCKED. In this mode, the system timing is locked to a timing reference signal. The reference is derived from one of the timing input signals.

Table 3-254 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving System Timing (Sheet 3 of 6)

Parameter Name	Description
clksw_stat	Starting in Release 1, this is the clock mode switch request state of the system timing. Values: ■ FORCED-HOLDOVER ■ ALL-REFERENCES-FAILED (This value is an indicator of system timing to be in autonomous holdover.) ■ NO-REQUEST.
fs_stat	Fast Start Status. This is an attribute of the timing pack hardware design. It is used when fast pull-in of the clock is necessary. Value(s): ■ NORMAL ■ FAST-START.
orefswr_stat	Output Timing Reference Switch Status. Starting in Release 3, this is the state of the output timing link switch. The value FORCED means, the system enters the Forced Switch state upon the initiation and successful completion of the Forced Switch command. While in the Forced Switch state the system may not switch the active timing reference, neither automatically nor by means of the Forced Switch or Manual Switch command. The value MANUAL means, the system enters the Manual Switch state upon the initiation and successful completion of the Manual Switch command. While in the Manual Switch state the system may switch the active timing reference automatically. The value NO-REQUEST indicates, this is the routine-operation quiet state in which no external command activities are occurring. The system enters this state upon initial start-up, and following a clear command, or the clearing of an automatic switch. Values: ■ MANUAL ■ FORCED ■ NO-REQUEST

Table 3-254 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving System Timing (Sheet 4 of 6)

Parameter Name	Description
refsw_stat	Reference Switch Status. The Reference Switch State is a state of the system timing link switch. The value FORCED means, the system shall enter the Forced Switch state upon the initiation and successful completion of the Forced Switch command. While in the Forced Switch state the system may not switch the active timing reference, neither automatically nor by means of the Forced Switch or Manual Switch command. The value MANUAL means, the system shall enter the Manual Switch state upon the initiation and successful completion of the Manual Switch command. While in the Manual Switch state the system may switch the active timing reference automatically. The value NO-REQUEST indicates, this is the routine-operation quiet state in which no external command activities are occurring. The system shall enter this state upon initial start-up, and following a clear command, or the clearing of an automatic switch. Values: ■ MANUAL ■ FORCED ■ NO-REQUEST.
stratum_level	Stratum Level Status. This provides information about stratum level of the system clock. Value(s): ■ SEC
syncmsg	System SSM (Sync. Status Messaging) Mode. Starting in Release 2.1, this parameter enables or disables the SSM protocol. The parameter provisions the automatic reference selection process to use the incoming QLs in QL-enabled mode or to ignore them in QL-disabled mode. Values: ■ DISABLE ■ ENABLE. When provisioned for ENABLE, sync messages will be sent on optical transmit interfaces. When provisioned for DISABLE, the message “DNU” (Do not Use) will be transmitted from the optical interface

Table 3-254 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving System Timing (Sheet 5 of 6)

Parameter Name	Description
sysql_stat	System Quality Level (QL) (starting in Release 1.0). This is the overall system timing quality level. Values: ■ DNU ■ PRC ■ SSUT ■ SSUL ■ SEC.
syssig_stat	System Timing Signal Status. This shows the overall status of the system clock as determined by hardware. It is independent of timing references. Values: ■ NORMAL ■ FAILED.
timing	Starting in Release 2.1, this parameter is a timing Alarm Severity Assignment Profile (ASAP) name to which the system timing points. Value: ■ PFNAME This is an alphanumerical string with a maximum of 24 characters. ■ Default.
wtr	Wait To Restore. This parameter indicates the provisioned wait to restore time used for all timing ports for revertive switching. This is the amount of time it takes for a reference to be used in a reference selection mechanism after the failure of the reference is cleared. Values: ■ 0 ■ 20SEC ■ 1MIN ■ 2MIN…60MIN ■ 99 (infinite).

Table 3-254 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving System Timing (Sheet 6 of 6)

Parameter Name	Description
wu_stat	Warm Up Status. This is an attribute of the timing pack hardware design. Values: ■ WARMING-UP ■ NORMAL.

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

Table 3-255 **RTRV-SYNCN** Output Parameters for Retrieving Assigned Timing Reference

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters. The following *spec_block* parameters are related to retrieve Assigned Timing Reference:

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 1 of 10)

Parameter Name	Description
extoutl1_pri	Starting in Release 3, this parameter indicates the derived external timing output reference priority for LINE1. Values: ■ 1 through 6 — Number 1 indicates the highest priority. Number 6 indicates the lowest priority. ■ DISABLE. — Indicates the reference is not used. The value is set via *extout_pri* of SET-SYNCN.
extoutl2_pri	Same as *extoutl1_pri*, except it is for LINE2.
extoutl3_pri	Same as *extoutl1_pri*, except it is for LINE3.
extoutl5_pri	Same as *extoutl1_pri*, except it is for LINE5.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 2 of 10)

Parameter Name	Description
extoutl6_pri	Same as *extoutl1_pri*, except it is for LINE6.
inqld1	Assigned Timing Reference QL Value. Starting in Release 2.1, this parameter shows the synchronization messaging quality level value for timing reference of the external timing input port 1. Values: ■ DNU ■ PRC ■ SSUT ■ SSUL ■ SEC. ■ NULL — Starting in Release 3.0 this value is returned when *inqld1_stat* is unequal to VALID
inqld2	Same as *inqld1,* except it is for port 2.
inqld1_stat	Input QL Status for **extref1**. Starting in Release 2.1, this parameter shows the synchronization messaging quality level status for **extref1** timing reference. The parameter describes the validity of the incoming quality level and can take the following values: VALID, when the QL is a valid SSM and stable, INVALID, when the QL is not a valid SSM, or unstable, NOT-SUPPORTED, when SSM reception is not supported on that interface (such as 2MHz), NOT-APPLICABLE, when no port is assigned to the current timing reference or the assigned timing reference experiences a reference fail. Values: ■ VALID ■ INVALID ■ NOT-SUPPORTED ■ NOT-APPLICABLE.
inqld2_stat	Same as *inqld1_stat,* except it is for **extref2**.
inqll1	Assigned Timing Reference QL Value. Starting in Release 2.1, these are the input synchronization status messaging that are received on **line1** timing reference.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 3 of 10)

Parameter Name	Description
	Values: ■ DNU ■ PRC ■ SSUT ■ SSUL ■ SEC ■ NULL — Starting in Release 3.0 this value is returned when *inqll1_stat* is unequal to VALID
inqll2	Same as *inqll1*, except it is for **line2**.
inqll3	Assigned Timing Reference QL Value. Starting in Release 3.0, this parameter shows the synchronization messaging quality level value for timing reference of the external timing input port 3. Values: ■ DNU ■ PRC ■ SSUT ■ SSUL ■ SEC. ■ NULL — Starting in Release 3.0 this value is returned when *inqll3_stat* is unequal to VALID
inqll4	Same as *inqll3*, except it is for port 4.
inqll5	Same as *inqll3*, except it is for port 5.
inqll6	Same as *inqll3*, except it is for port 6.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 4 of 10)

Parameter Name	Description
inqll1_stat	Input QL status for **line1**. Starting in Release 2.1, this parameter shows the synchronization messaging quality level status for **line1** timing reference. The parameter describes the validity of the incoming quality level and can take the following values: VALID, when the QL is a valid SSM and stable, INVALID, when the QL is not a valid SSM, or unstable, NOT-SUPPORTED, when SSM reception is not supported on that interface (such as 2MHz), NOT-APPLICABLE, when no port is assigned to the current timing reference or the assigned timing reference experiences a reference fail. Values: ■ VALID ■ INVALID ■ NOT-SUPPORTED ■ NOT-APPLICABLE.
inqll2_stat	Same as *inqll1_stat*, except it is for **line2**.
inqll3_stat	Same as *inqll1_stat*, except it is for **line3**.
inqll4_stat	Same as *inqll1_stat*, except it is for **line4**.
inqll5_stat	Same as *inqll1_stat*, except it is for **line5**.
inqll6_stat	Same as *inqll1_stat*, except it is for **line6**.
qld1_prov	QL provisioned. Starting in Release 2.1, this parameter is the provisioned quality level sync message that overrides what is received for **extref1**. Values: ■ AUTO ■ PRC ■ SSUT ■ SSUL ■ SEC.
qld2_prov	Same as *qld1_prov*, except it is for **extref2**.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 5 of 10)

Parameter Name	Description
qll1_prov	QL Provisioned. Starting in Release 2.1, this parameter is the provisioned quality level sync message that overrides what is received for **line1**. Values: ■ AUTO Implies sync message support. ■ PRC ■ SSUT ■ SSUL ■ SEC.
qll2_prov	Same as *qll1_prov*, except it is for **line2**.
qll3_prov	Same as *qll1_prov*, except it is for **line3**.
qll4_prov	Same as *qll1_prov*, except it is for **line4**.
qll5_prov	Same as *qll1_prov*, except it is for **line5**.
qll6_prov	Same as *qll1_prov*, except it is for **line6**.
refd1_lock	This shows **extref1** timing reference lockout state. This parameter indicates the timing reference lockout state of the specified timing reference. It shall be the status at the input of the timing link switch for system timing. The value LOCKOUT means, the reference has been locked out by the user, and cannot be used as a timing reference signal until the lockout is cleared. Values: ■ LOCKOUT ■ NO-LOCKOUT.
refd2_lock	Same as *refd1_lock*, except it is for **extref2** .

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 6 of 10)

Parameter Name	Description
refd1_stat	Assigned Timing Reference Signal Status. This shows the status of **extref1** timing reference. The status FAILED means, the timing reference is failed. The status WAIT-TO-RESTORE means, the wait to restore timer is active before transition to NORMAL. The status NOT-CONNECTED means, there is no port assigned to the timing reference (see description of parameter *trefd1_aid*). Values: ■ NORMAL ■ FAILED ■ WAIT-TO-RESTORE ■ NOT-CONNECTED
refd2_stat	Same as *refd1_stat*, except it is for **extref2**.
refl1_lock	This shows **line1** timing reference lockout state. This parameter indicates the timing reference lockout state of the specified timing reference. It shall be the status at the input of the timing link switch for system timing. The value LOCKOUT means, the reference has been locked out by the user, and cannot be used as a timing reference signal until the lockout is cleared. Values: ■ LOCKOUT ■ NO-LOCKOUT.
refl2_lock	Same as *refl1_lock*, except it is for **line2**.
refl3_lock	Same as *refl1_lock*, except it is for **line3**.
refl4_lock	Same as *refl1_lock*, except it is for **line4**.
refl5_lock	Same as *refl1_lock*, except it is for **line5**.
refl6_lock	Same as *refl1_lock*, except it is for **line6**.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 7 of 10)

Parameter Name	Description
refl1_stat	Assigned Timing Reference Signal Status. This shows the status of **line1** timing reference. The status FAILED means, the timing reference is failed. The status WAIT-TO-RESTORE means, the wait to restore timer is active before transition to NORMAL. The status NOT-CONNECTED means, there is no port assigned to the timing reference (see description of parameter *trefl1_aid*). Values: ■ NORMAL ■ FAILED ■ WAIT-TO-RESTORE ■ NOT-CONNECTED
refl2_stat	Same as *refl1_stat*, except it is for **line2**.
refl3_stat	Same as *refl1_stat*, except it is for **line3**.
refl4_stat	Same as *refl1_stat*, except it is for **line4**.
refl5_stat	Same as *refl1_stat*, except it is for **line5**.
refl6_stat	Same as *refl1_stat*, except it is for **line6**.
sclkrefl1_lock stat	Starting in Release 3, this parameter indicates assigned station clock output timing reference lockout state for **line1**. This parameter displays the timing reference lockout state of the specified timing reference. It shall be the status at the input of the timing link switch for external timing output. The value LOCKOUT means, the reference has been locked out by the user, and cannot be used as a timing reference signal until the lockout is cleared. Values: ■ LOCKOUT ■ NO-LOCKOUT.
sclkrefl2_lock stat	Same as *sclkrefl1_lockstat*, except it is for **line2**.
sclkrefl3_lock stat	Same as *sclkrefl1_lockstat*, except it is for **line3**.
sclkrefl4_lock stat	Same as *sclkrefl1_lockstat*, except it is for **line4**.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 8 of 10)

Parameter Name	Description
sclkrefl5_lockstat	Same as *sclkrefl1_lockstat*, except it is for **line5**.
sclkrefl6_lockstat	Same as *sclkrefl1_lockstat*, except it is for **line6**.
syncrefd1_pri	System Timing Reference Priority. This indicates the priority for **extref1** timing reference. When multiple input references have been given the same priority value, it implies non-revertive switching between the associated references. Otherwise, it implies revertive switching to the reference with the highest assigned priority. Values: ■ DISABLE — Indicates that no priority has been assigned relative to protection switching. The reference will be monitored but will not be used in the switching scheme. ■ 1 — Number 1 indicates the highest priority. ■ 2 — The greater the number, the lower the priority. ■ 3 — (starting in Release 1.0) ■ 4 — (starting in Release 2.1) ■ 5 through 8 — (starting in Release 3.0).
syncrefd2_pri	Same as *syncrefd1_pri*, except it is for **extref2**.
syncrefd1_prov	Assigned Timing Reference AID. This indicates the first external timing reference that can be provisioned. Value(s): ■ **extref1**.
syncrefd2_prov	Same as *syncrefd1_prov*, except it is for **extref2**.
syncrefl1_pri	System Timing Reference Priority. This indicates the priority for **line1** timing reference. When multiple input references have been given the same priority value, it implies non-revertive switching between the associated references. Otherwise, it implies revertive switching to the reference with the highest assigned priority. Values: ■ DISABLE — Indicates that reference is not used. ■ 1 — Number 1 indicates the highest priority. ■ 2 — The greater the number, the lower the priority.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 9 of 10)

Parameter Name	Description
	■ 3 (starting in Release 2.1) ■ 4 (starting in Release 2.1) ■ 5 through 8 (starting in Release 3.0)
syncrefl2_pri	Same as *syncrefl1_pri*, except it is for **line2**.
syncrefl3_pri	Same as *syncrefl1_pri*, except it is for **line3** .
syncrefl4_pri	Same as *syncrefl1_pri*, except it is for **line4**.
syncrefl5_pri	Same as *syncrefl1_pri*, except it is for **line5** .
syncrefl6_pri	Same as *syncrefl1_pri*, except it is for **line6**.
syncrefl1_prov	Assigned Timing Reference AID. This defines the first line timing reference that can be provisioned. Value(s): ■ **line1**.
syncrefl2_prov	Same as *syncrefl1_prov*, except it is for **line2**.
syncrefl3_prov	Same as *syncrefl1_prov*, except it is for **line3**.
syncrefl4_prov	Same as *syncrefl1_prov*, except it is for **line4**.
syncrefl5_prov	Same as *syncrefl1_prov*, except it is for **line5**.
syncrefl6_prov	Same as *syncrefl1_prov*, except it is for **line6**.
trefd1_aid	Timing Reference Assigned Port AID. This is the designated port AID of the *syncrefd1_prov* parameter. Values: ■ **exttmg0** (port AID of **extref1**) ■ NOT-CONNECTED. There is no timing reference signal assigned to the specified timing reference.

Table 3-256 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 10 of 10)

Parameter Name	Description
trefd2_aid	Timing Reference Assigned Port AID. This is the designated port AID of the *syncrefd2_prov* parameter. Values: ■ **exttmg1** (port AID of **extref2**) ■ NOT-CONNECTED. There is no timing reference signal assigned to the specified timing reference.
trefl1_aid	Timing Reference Assigned Port AID. This is the designated port AID of the *syncrefl1_prov* parameter. Values: ■ port AID of **line1** ■ NOT-CONNECTED. There is no timing reference signal assigned to the specified timing reference.
trefl2_aid	Same as *trefl1_aid*, except it is for **line2**.
trefl3_aid	Same as *trefl1_aid*, except it is for **line3**.
trefl4_aid	Same as *trefl1_aid*, except it is for **line4**.
trefl5_aid	Same as *trefl1_aid*, except it is for **line5**.
trefl6_aid	Same as *trefl1_aid*, except it is for **line6**.

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

Table 3-257 **RTRV-SYNCN** Output Parameters for Retrieving Port

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters. The following *spec_block* parameters are related to retrieve Port.

Table 3-258 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Port (Sheet 1 of 4)

Parameter Name	Description
ext1_if	Starting in Release 1.0, this parameter indicates the **extref1** input signal format. Value(s): ■ 2MHz (starting in Release 1.0) ■ 2Mbit-framed (starting in Release 1.0) ■ 2Mbit-unframed (starting in Release 1.0).
ext2_if	Same as *ext2_if*, except it is for **extref2**.
ext_imped	External Timing Port Impedance. Starting in Release 2.1, this parameter is for retrieving the impedance of the external timing output ports. The following values are measured by ohm. Values: ■ 120 ■ 75.
ext1_of	Starting in Release 1.0, this parameter indicates the **extref1** output signal format. Values: ■ 2MHz (starting in Release 1.0) ■ 2Mbit-framed (starting in Release 1.0) ■ 2Mbit-unframed (starting in Release 1.0).
ext1out_en	External timing output enabling/disabling. Starting in Release 2.1, this parameter specifies whether the first external timing output is enabled or disabled. Values: ■ ENABLE ■ DISABLE.
ext1out_prov	Starting in Release 3.0, this parameter specifies the signal source of the external output timing. The value SETG means the system clock. The value TLS means the timing link switch of the external timing output. The value is set via *extout_prov* of **SET-SYNCN**. Value(s): ■ SETG ■ TLS.

Table 3-258 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Port (Sheet 2 of 4)

Parameter Name	Description
ext1out_sig_ stat	Starting in Release 2.1, this parameter for output signal status. This parameter indicates the external output signal status. The value NORMAL shall indicate when the output timing signal is provisioned enabled and providing a correctly synchronized output timing signal. The value DISABLED shall indicate when the output timing signal has been disabled by means of user provisioning. The value UNACCEPTABLE shall indicate when the output timing signal is enabled but the timing output does not provide a suitable timing reference signal. This is caused by failed reference into the timing output process or references rejected based on threshold AIS criteria. Values: ■ NORMAL ■ DISABLE ■ UNACCEPTABLE.
extout1_ssm	Starting in Release 3.The value set by this parameter is sent when the signal level is below the quality acceptance level (*qlout_tais*) or when *frcdus* is enabled. Values: ■ AISMODE ■ QLMODE.
frcdus	Starting in Release 3, this parameter is Sync Message Force DUS Enable. Values: ■ ENABLE ■ DISABLE.
loopdelay	Timing regenerator loop delay. This parameter indicates the delay in the SASE/BITS loop operation. The values are represented by seconds with a resolution of 1 second. Values: ■ 0 … 60 seconds. The default value is 10 seconds.
ql1_in	QL In. Starting in Release 3.0, this parameter is the incoming QL for the exttmg0 station clock port.

Table 3-258 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Port (Sheet 3 of 4)

Parameter Name	Description
	Values: ■ DNU ■ PRC ■ SSUT ■ SSUL ■ SEC ■ NULL (this value is returned when incoming signal is not valid similar to *inqld1*)).
ql2_in	QL In. Starting in Release 3.0, this parameter is the incoming QL for the exttmg1 station clock port. For the values see *ql1_in.*
ql1_out	QL Out. Starting in Release 3.0, this parameter is the QL for the timing output port. Values: ■ DNU (in stead off DNU the SONET equivalent DUS can be reported) ■ PRC ■ SSUT ■ SSUL ■ SEC. ■ NULL (this value is returned indicates that the signal is not valid e.g. when incoming signal is disabled or when AIS is sent)
qlout_tais	Acceptance QL for Output Threshold AIS. Starting in Release 2.1, this parameter is the provisioned level for the incoming sync messaging in the reference STM-N signal. When the incoming message is at or below this level the signal sent into the derived timing output depends on the setting of the *extout_ssm* parameter. Values: ■ PRC ■ SSUT ■ SSUL ■ SEC.

Table 3-258 **RTRV-SYNCN** *spec_block* Output Parameters for Retrieving Port (Sheet 4 of 4)

Parameter Name	Description
regen_loop	Timing Regenerator Loop Enable. This parameter indicates if the timing signal is regenerated by a SASE/BITS loopback. When this parameter is not set to DISABLE, the sync message "DNU" (Do not Use) will be inserted in the traffic output port associated with the traffic input port used as source for the station clock output. Values: ■ DISABLE ■ EXTREF1 ■ EXTREF2 ■ BOTH.
tinpaid1	Starting in Release 1, this is external timing input port AID. Value(s): ■ **exttmg0**.
tinpaid2	Starting in Release 1, this is external timing input port AID. Value(s): ■ **exttmg1**.
toutpaid1	Starting in Release 2.1, this is external timing port out AID. Value(s): ■ **exttmg0_out**.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-SYNCN** command:

```
RTRV-SYNCN:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "stratum_level=3,sysql_stat=st3,syssig_stat=normal,clkmod_stat=
locked,"
   "fs_stat=normal,clksw_stat=no-request,"
   "syncrefd1_prov=extref1,syncrefd2_prov=extref2,"
   "trefd1_aid=exttmg0,trefd2_aid=exttmg1,"
   "syncrefd1_pri=1,syncrefd2_pri=2,"
   "active_ref=extref1,refd1_stat=normal,refd2_stat=
not-connected,"
   "refsw_stat=no-request,refd1_lock=no-lockout,refd2_lock=
no-lockout,"
   "wtr=20sec,ext1_if=esf,ext2_if=esf,timing=att"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

SET-SYNCN

OPR-SYNCNSW

RLS-SYNCNSW

NAME

RTRV-TCA-ASGNMT: Retrieve TCA Assignment

The **RTRV-TCA-ASGNMT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-TCA-ASGNMT:*tid*:*aid*:*ctag*::*pftype*,*pfname*;

DESCRIPTION

The **RTRV-TCA-ASGNMT** command allows the user to retrieve a list of AIDs that have been assigned to the specified profile type and name. For a general description of TCA profiles, refer to the **ENT-TCA-PROF** command.

The **RTRV-TCA-ASGNMT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-259 **RTRV-TCA-ASGNMT** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. See the AID table in OSEG Appendix A. Value: shelf AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-259 `RTRV-TCA-ASGNMT` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ **ENET** ■ **HOVC** ■ **PHYSICAL** ■ **RS-MS**
pfname	Profile Name. This indicates the name of the PM TCA profile. Value: This is an alphanumeric character string with a maximum of 24 characters.

OUTPUT FORMAT

If the **`RTRV-TCA-ASGNMT`** command completes successfully, this is the normal response for all *pftype* values except DS3:

```
   sid date time
M  ctag COMPLD
   "pftype,pfname:aid"
   .     .     .
   .     .     .
;
```

If the **`RTRV-TCA-ASGNMT`** command completes successfully, this is the normal response when *pftype* is ds3:

```
   sid date time
M  ctag COMPLD
   "ds3,pfname:aid,dirn"
   .     .     .
   .     .     .
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to the **RTRV-TCA-ASGNMT** command as well.

Table 3-260 **RTRV-TCA-ASGNMT** Output Parameters

Parameter Name	Description
aid	Access Identifier. This is the address of the ports or tributaries for which there is an assigned PM TCA profile.
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ ENET ■ HOVC ■ PHYSICAL ■ RS-MS
pfname	Profile Name. This indicates the name of the PM TCA profile. Value: This is an alphanumeric character string with a maximum of 24 characters.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-TCA-ASGNMT** command by the network element:

```
  RTRV-TCA-ASGNMT:LT-WBM:1-1:123456::ds3,sprint;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   “ds3,sprint:1-1-u-#-01-1-1,in”
   “ds3,sprint:1-1-u-#-01-1-3,out”
   “ds3,sprint:1-1-u-#-01-1-5,in”
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there apply to the **RTRV-TCA-ASGNMT** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response:

- The profile name specified is not valid or too long.

The **Input, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The profile type specified is not valid.

The **Status, Data Not Consistent, invalid instance of entity** error response is shown below:

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

The following condition will cause an SDNC error response:

- The profile name specified does not exist.

RELATED TL1 MESSAGES

DLT-TCA-PROF

ED-rr

ED-TCA-PROF

ENT-TCA-PROF

RTRV-TCA-PROF

NAME

RTRV-TCA-PROF: Retrieve TCA Profile

The **RTRV-TCA-PROF** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-TCA-PROF:*tid*::*ctag*::*pftype*[,*pfname*];

DESCRIPTION

The **RTRV-TCA-PROF** command allows the user to retrieve either a list of profile names that have been created for a specific profile type or the contents of a profile whose type and name are given in this command. For a general description of TCA profiles, refer to the **ENT-TCA-PROF** command.

The **RTRV-TCA-PROF** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-261 **RTRV-TCA-PROF** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-261 **`RTRV-TCA-PROF`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ **ENET** ■ **HOVC** ■ **PHYSICAL** ■ **RS-MS**
pfname	Profile Name. If this field is NULL, the output will only consist of a list of all profile names for the specific profile type that was requested. If a valid profile name is inserted in this field, the output will display the parameters within the profile with their values. The system supports two default sets of profiles called “Default” and “Default0.” Value: This is an alphanumeric character string with a maximum of 24 characters. Starting in Release 3.0, the Default0 profile will be changed to NotReported.

OUTPUT FORMAT

If the system receives this command and the profile name is NULL, the following response is returned:

```
   sid date time
M  ctag COMPLD
   "pftype:Default"
   "pftype:pfname"
   "pftype:pfname"
   .     .     .     .     .     .
   .     .     .     .     .     .
;
```

If the system receives this command with a valid profile name, the following response is returned:

```
   sid date time
M  ctag COMPLD
   "pftype,pfname:spec_block"
;
```

Spec_block parameters will be displayed in the same order as shown in the Output Parameters table for each profile type.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response apply to the **RTRV-TCA-PROF** command as well.

Table 3-262 **RTRV-TCA-PROF** Output Parameters

Parameter Name	Description
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ ENET ■ HOVC ■ PHYSICAL ■ RS-MS
pfname	Profile Name. This indicates the name(s) of the PM TCA profile. Value: This is an alphanumeric character string with a maximum of 24 characters.
spec_block	See the following table for all *spec_block* parameters.

For all the following *spec_block* parameters, a value of 0 indicates thresholding has been disabled. All the values in parentheses are the initial system default values.

Table 3-263 `RTRV-TCA-PROF` Output *spec_block* Parameters (Sheet 1 of 5)

Parameter Name	Description
	The following parameters belong to PHYSICAL profile type.
lbc	Laser Bias Current. Values: ■ 0 ■ 1 (1). A value of 1 will enable thresholding to the default value.
opt	Optical Power Transmitted. Values: ■ 0 ■ 1 (1). A value of 1 will enable thresholding to the default value.
opr	Optical Power Received. Values: ■ 0 ■ 1 (1). A value of 1 will enable thresholding to the default value.
	The following RS parameters belong to SDH RS-MS profile type:
qhrsnes	15-minute RS_N_ES bin. Range: 0-900 (180)
dayrsnes	Day RS_N_ES bin. Range: 0-86400 (1500)
qhrsnses	15-minute RS_N_SES bin. Range: 0-810 (15)
dayrsnses	Day RS_N_SES bin. Range: 0-77760 (20)
qhrsnbbe	15-minute RS_N_BBE bin. Range: 0-7199100 (9000)
dayrsnbbe	Day RS_N_BBE bin. Range: 0-691113600 (48000)
qhrsnuas	15-minute RS_N_UAS bin. Range: 0-900 (15)
dayrsnuas	Day RS_N_UAS bin. Range: 0-86400 (20)

Table 3-263 RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 2 of 5)

Parameter Name	Description
	The following MS parameters belong to SDH RS-MS profile type:
qhmses	15-minute MS_N_ES and MS_F_ES bin. Range: 0-900 (50)
daymses	Day MS_N_ES and MS_F_ES bin. Range: 0-86400 (150)
qhmsses	15-minute MS_N_SES and MS_F_SES bin. Range: 0-810 (10)
daymsses	Day MS_N_SES and MS_F_SES bin. Range: 0-77760 (15)
qhmsbbestm1	15-min MS_N_BBE and MS_F_BBE stm1 bin. Range: 0-16777215 *(228000)
daymsbbestm1	Day MS_N_BBE and MS_F_BBE stm1 bin. Range: 0-2147483647 ** (432000)
qhmsbbestm4	15-min MS_N_BBE and MS_F_BBE stm4 bin. Range: 0-16777215 *(912000)
daymsbbestm4	Day MS_N_BBE and MS_F_BBE stm4 bin. Range: 0-2147483647 **(1728000)
qhmsbbestm16	15-min MS_N_BBE/MS_F_BBE stm16 bin. Range: 0-16777215 *(3648000)
daymsbbestm16	Day MS_N_BBE and MS_F_BBE stm16 bin. Range: 0-2147483647 **(6912000)
qhmsbbestm64	15-min MS_N_BBE/MS_F_BBE stm64 bin. Range: 0-16777215 *(14592000)
daymsbbestm64	Day MS_N_BBE and MS_F_BBE stm64 bin. Range: 0-2147483647 **(27648000)
qhmsuas	15-min MS_N_UAS/MS_F_UAS stm64 bin. Range: 0-900 (15)
daymsuas	Day MS_N_UAS and MS_F_UAS stm64 bin. Range: 0-86400 (20)
qhmsnfecc	15-min MS_N_FECC stm64 bin. Range: 0-5184000(5184)
daymsnfecc	Day MS_N_FECC stm64 bin. Range: 0-497664000 (497664)

Table 3-263 RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 3 of 5)

Parameter Name	Description
qhmsnfecu	15-min MS_N_FECU stm64 bin. Range: 0-2592000 (2592)
daymsnfecu	Day MS_N_FECU stm64 bin. Range: 0-248832000 (248832)
	The following parameters belong to SDH HOVC profile type:
qhvcesvc3	15-minute VC_N_ES and VC_F_ES VC3 bin. Range: 0-900 (150)
dayvcesvc3	Day VC_N_ES and VC_F_ES VC3 bin. Range: 0-86400 (600)
qhvcesvc4	15-minute VC_N_ES and VC_F_ES VC4 bin. Range: 0-900 (180)
dayvcesvc4	Day VC_N_ES and VC_F_ES VC4 bin. Range: 0-86400 (1500)
qhvcesvc44c	15-minute VC_N_ES/VC_F_ES VC4-4C bin. Range: 0-900 (180)
dayvcesvc44c	Day VC_N_ES/VC_F_ES VC4-4C bin. Range: 0-86400 (1500)
qhvcesvc416c	15-minute VC_N_ES/VC_F_ES VC4-16C bin. Range: 0-900 (180)
dayvcesvc416c	Day VC_N_ES/VC_F_ES VC4-16C bin. Range: 0-86400 (1500)
qhvcsesvc3	15-minute VC_N_SES/VC_F_SES VC3 bin. Range: 0-810 (15)
*dayvcsesvc3*Day	VC_N_SES/VC_F_SES VC3 bin. Range: 0-77760 (20)
qhvcsesvc4	15-minute VC_N_SES/VC_F_SES VC4 bin. Range: 0-810 (15)
dayvcsesvc4	Day VC_N_SES/VC_F_SES VC4 bin. Range: 0-77760 (20)
qhvcsesvc44c	15-minute VC_N_SES/VC_F_SES VC44C bin. Range: 0-810 (15)
dayvcsesvc44c	Day VC_N_SES/VC_F_SES VC44C bin. Range: 0-77760 (20)
qhvcsesvc416c	15-minute VC_N_SES/VC_F_SES VC416C bin. Range: 0-810 (15)

Table 3-263 **RTRV-TCA-PROF** Output *spec_block* Parameters (Sheet 4 of 5)

Parameter Name	Description
dayvcsesvc416c	Day VC_N_SES/VC_F_SES VC416C bin. Range: 0-77760 (20)
qhvcbbevc3	15-minute VC_N_BBE/VC_F_BBE VC3 bin. Range: 0-65535 &(36000)
dayvcbbevc3	Day VC_N_BBE/VC_F_BBE VC3 bin. Range: 0-8388607 &&(48000)
qhvcbbevc4	15-minute VC_N_BBE/VC_F_BBE VC4 bin. Range: 0-65535 &(36000)
dayvcbbevc4	Day VC_N_BBE/VC_F_BBE VC4 bin. Range: 0-8388608 &&(48000)
qhvcbbevc44c	15-minute VC_N_BBE/VC_F_BBE VC44C bin. Range: 0-16777215 *(36000)
dayvcbbevc44c	Day VC_N_BBE/VC_F_BBE VC44C bin. Range: 0-2147483647 **(48000)
qhvcbbevc416c	15-minute VC_N_BBE/VC_F_BBE VC416C bin. Range: 0-16777215 *(36000)
dayvcbbevc416c	Day VC_N_BBE/VC_F_BBE VC416C bin. Range: 0-2147483647 **(48000)
qhvcuasvc3	15-minute VC_N_UAS/VC_F_UAS VC3 bin. Range: 0-900 (15)
dayvcuasvc3	Day VC_N_UAS/VC_F_UAS VC3 bin. Range: 0-86400 (20)
qhvcuasvc4	15-minute VC_N_UAS/VC_F_UAS VC4 bin. Range: 0-900 (15)
dayvcuasvc4	Day VC_N_UAS/VC_F_UAS VC4 bin. Range: 0-86400 (20)
qhvcuasvc44c	15-minute VC_N_UAS/VC_F_UAS VC44C bin. Range: 0-900 (15)
dayvcuasvc44c	Day VC_N_UAS/VC_F_UAS VC44C bin. Range: 0-86400 (20)
qhvcuasvc416c	15-minute VC_N_UAS/VC_F_UAS VC416C bin. Range: 0-900 (15)
dayvcuasvc416c	Day VC_N_UAS/VC_F_UAS VC416C bin. Range: 0-86400 (20)
	The following parameters belong to the ENET profile type:

Table 3-263 RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 5 of 5)

Parameter Name	Description
qhedfe	15-minute EDFE bin. Range: 0-4294967295 frames (1875000 frames)
dayedfe	Day EDFE bin. Range: 0-4294967295 frames (9000000 frames)

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-TCA-PROF** command:

```
RTRV-TCA-PROF:LT-WBM::123456::section-line;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   section-line:Default”
   “section-line:att”
   “section-line:mci”
   “section-line:sprint”
   “section-line:gte”
;
```

The following is another example for the **RTRV-TCA-PROF** command:

```
RTRV-TCA-PROF:LT-WBM::123456::ds3,att;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "ds3,att:qhcvl=387,daycvl=3500,qhesl=25,dayesl=250,"
   "ds3,att:qhsesl=4,daysesl=33,qhcvp=382,daycvp=3820,"
   "ds3,att:qhesp=25,dayesp=210,qhesap=15,dayesap=250,"
   "ds3,att:qhesbp=20,dayesbp=250,qhsesp=4,daysesp=30,"
   "ds3,att:qhsasp=2,daysasp=8,qhuasp=10,dayuasp=7"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there apply to the **RTRV-TCA-PROF** command.

The **Input, Data Not Valid** error response is shown below:

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

This error message is issued if one or more of the input parameter values does not belong to the set of allowable parameter values for that specific parameter. For example, if the parameter ***prmtr_tf*** can only have values **TRUE** or **FALSE**, then specifying a value of **NO** would result in an IDNV response.

The **Input, Data Not Valid** error response is shown below:

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

The following condition will cause an IDNV error response:

- The profile name specified is not valid or too long.

The **Input, Parameter Not Consistent** error response is shown below:

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

The following condition will cause an IPNC error response:

- The profile type specified is not valid.

The **Status, Data Not Consistent, invalid instance of entity** error response is shown below:

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

The following condition will cause an SDNC error response:

- The profile name specified does not exist.

RELATED TL1 MESSAGES

DLT-TCA-PROF

ED-TCA-PROF

ENT-TCA-PROF

RTRV-TCA-ASGNMT

NAME

RTRV-ULS: Retrieve Upper Layer Stack

The **RTRV-ULS** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ULS:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-ULS** command is used to retrieve the parameters in the upper layer OSI. The parameters include fields of the Registration Manager (RM).

RM parameters consist of the Registration Manager enable/disable, the Directory System Agent (DSA) address, and the name prefix fields. The DSA address is the address of the directory in which network elements (NE) from a particular subnetwork are registered. The name prefix specifies where in the directory tree structure the NEs of this subnetwork are registered.

The **RTRV-ULS** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-264 **RTRV-ULS** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-264 **RTRV-ULS** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 4. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV-ULS** request is successful, the network element returns the following normal completion response:

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

OUTPUT PARAMETERS

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

Table 3-265 **RTRV-ULS** Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 4. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
spec_block	See the following table for all *spec_block* parameters.

Table 3-266 **`RTRV-ULS`** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
ip_ad	IP Address. This parameter is available starting in Release 4. This parameter belongs to IP type. This is the 32-bit IPv4 address of the system. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255.
ip_drad	IP Default Router Address. This parameter is available starting in Release 4. This parameter belongs to IP type. This is the 32-bit IPv4 default router address of the system. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255.
ip_snm	IP Subnet Mask. This parameter is available starting in Release 4. This parameter belongs to IP type. This is the 32-bit IPv4 subnet mask of the system. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255.
lv_port	Length Value Port. This parameter is available starting in Release 4. The parameter sets the port number over which the T-TD function is accessible using the Length Value encoding method and is an optional parameter. Modifying this parameter causes a communications software reset. Values: ■ 0 … 65535. The initial value is 3081. NOTE: RFC1700 lists the registered port numbers.
raw_port	This parameter is available starting in Release 4. The parameter sets the port number over which the T-TD function is accessible using raw-mode encoding and is an optional parameter. Modifying this parameter causes a communications software reset. Values: ■ 0 … 65535. The initial value is 3082. NOTE: RFC1700 lists the registered port numbers.

Table 3-266 **RTRV-ULS** *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
telnet_port	This parameter is available starting in Release 4. The parameter sets the port number over which the T-TD function is accessible using telnet encoding mode and is an optional parameter. Modifying this parameter causes a communications software reset. Values: ■ 0 … 65535. The initial value is 3083. NOTE: RFC1700 lists the registered port numbers.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **RTRV-ULS** command:

```
RTRV-ULS:LT-WBM:1-1-#-#-dccei-cp:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dccei-cp:dsa_nsap=39840F800000007AE0000000001234567890
1200"
   "1-1-#-#-dccei-cp:np_co=us"
   "1-1-#-#-dccei-cp:np_org=abcd1234"
   "1-1-#-#-dccei-cp:np_orgu1=wxyz98765"
   "1-1-#-#-dccei-cp:np_orgu2="
   "1-1-#-#-dccei-cp:ip_ad=198.78.46.8"
   "1-1-#-#-dccei-cp:ip_snm=255.255.255.128"
   "1-1-#-#-dccei-cp:lv_port=3081"
   "1-1-#-#-dccei-cp:raw_port=3082"
   "1-1-#-#-dccei-cp:rm=DISABLE"
   "1-1-#-#-dccei-cp:duara=ENABLE"
   "1-1-#-#-dccei-cp:tl1tcpipgw=DISABLE"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

ENT-ULS

ENT-ULSDCC-L3

ENT-ULSDCC-L4

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

NAME

RTRV-ULSDCC-L3: Retrieve Upper Layer Stack DCC Layer 3

The **RTRV-ULSDCC-L3** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ULSDCC-L3:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-ULSDCC-L3** command is used to retrieve the parameters in Layer 3 of the OSI stack. Layer 3 parameters include the fields of the Network Service Access Point (NSAP) address. The NSAP provides unique identification for each network element in a subnetwork.

The **RTRV-ULSDCC-L3** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-267 **RTRV-ULSDCC-L3** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 1. An AID range using the ALL keyword is allowed, but only within one shelf. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.

Table 3-267 `RTRV-ULSDCC-L3` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

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

Starting with Release 2.0, if the network element fully complies with the request, the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **`RTRV-HDR`** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **`RTRV-ULSDCC-L3`** command.

The following parameters identify specific fields of the NSAP address for the target network element specified by the *tid* parameter: *l3idp (l3afi and l3idi), l3dfi, l3org, l3res, l3rd, l3area, l3sys,* and *l3sel*.

Table 3-268 `RTRV-ULSDCC-L3` Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 2.0. See the AID table in OSEG Appendix A. Value: datacom AID (DCC circuit pack AID).
spec_block	See the following table for all *spec_block* parameters.

Table 3-269 `RTRV-ULSDCC-L3` *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
l3afi	NSAP Authority and Format Identifier. This parameter is available starting in Release 1. This is a 1 octet (2-digit hexadecimal) field to specify the format for the rest of the address. The initial value is 39 hex, which identifies the iso_dcc format.
l3area	NSAP Area Identifier. This parameter is available starting in Release 1. This field is used to identify NEs in the same area. Where multiple areas are defined, Level 2 IS needs to be provisioned to allow addressing across areas. This field consists of the next 2 octets (4-digit hex) of the NSAP address.
l3dfi	DSP (Domain Specific Part) Format Identifier. This parameter is available starting in Release 1. This consists of the next octet (2-digit hex) of the NSAP address. The purpose of this octet is to specify the format for the rest of the address.The initial value of DFI is set to 80 hex.
l3idi	NSAP Initial Domain Identifier. This parameter is available starting in Release 1. This is a 2 octet (4-digit hexadecimal) field to specify the country code indicating the registration authority responsible for the allocation and assignment of the NSAP address. The initial value is 0000 hex, which identifies the global registration authority.

Table 3-269 **`RTRV-ULSDCC-L3`** *spec_block* Output Parameters (Sheet 2 of 3)

Parameter Name	Description
l3isct	Intermediate System Configuration Timer. This parameter is available starting in Release 1. This field is used when the network element is acting in the Intermediate System role. Values: 10 - 1000 seconds. The initial value is 10 seconds. Starting with Release 4.0 this parameter is no longer supported to improve the connectivity robustness.
l3isisnl	This parameter is available starting in Release 3. This parameter enables or disables the network element specified by the *tid* as a Level 2 IS, in addition to being a Level 1 IS. Values: ■ L1 — Level 1 (initial value) ■ L12 — Level 1 and 2 ■ L12PRC — Level 1 and 2 with partition repair capability (Value supported in future release)
l3lc	CLNP Lifetime Control Parameter. This parameter is available starting in Release 1. The value of this parameter determines whether a received PDU should be forwarded or discarded. Values: 2 - 255 hops. The initial value is 255 hops. Starting with Release 4.0 this parameter is no longer supported to improve the connectivity robustness.
l3lv2is	This parameter is available starting in Release 1. This parameter enables or disables the network element specified by the *tid* as a Level 2 IS, in addition to being a Level 1 IS. Values: ■ DISABLE ■ ENABLE. The initial value is DISABLE. Starting from Release 3.0, the parameter *l3lv2is* is replaced by *l3isisnl*.
l3org	Organization Identifier. This parameter is available starting in Release 1. This field makes up the next 3 octets (6-digit hex) to provision into the NSAP address, the allocated Company Code. The initial value for this parameter is 000000 hex.

Table 3-269 `RTRV-ULSDCC-L3` *spec_block* Output Parameters (Sheet 3 of 3)

Parameter Name	Description
l3rd	NSAP Routing Domain. This parameter is available starting in Release 1. This NSAP field identifies a unique Routing Domain within an administrative domain. Standard use of this parameter has not been defined in the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. This makes the next 2 octets (4-digit hex) field with the initial value of 0000 hex.
l3res	NSAP Reserved. This parameter is available starting in Release 1. This field makes the next 2 octets (4-digit hex) that currently has not been assigned a specific purpose by the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. The initial value for this parameter is 0000 hex.
l3sel	NSAP Selector. This parameter is available starting in Release 1. This consists of the last octet (2-digit hex) of the address. Its purpose is to differentiate multiple NSAP addresses associated with the same End System. Its value is not fixed and changes according to its usage. It is set to AF hex when TARP is run over CLNP. It has a value of 1D hex when TP4 is run over CLNP. It may be set to 00 hex for other uses. When retrieved and displayed, it will always be shown as 00 hex.
l3sys	System Identifier. This parameter is available starting in Release 1. This field consists of the next 6 octets (12-digit hex) of the NSAP address. The purpose of this field is to guarantee that the NSAP address is globally unique.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **RTRV-ULSDCC-L3** command by the network element:

```
RTRV-ULSDCC-L3:LT-WBM:1-1-#-#-dccei-cp:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dccei-cp:l3afi=39,l3res=0000,l3lc=255,l3dfi=80"
   "1-1-#-#-dccei-cp:l3org=000000,l3idi=0000,l3rd=0000,l3area=0000"
   "1-1-#-#-dccei-cp:l3sys=08006A112345,l3sel=00,l3lv2is=disable"
   "1-1-#-#-dccei-cp:l3isct=10
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-ULSDCC-L3** command.

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

ENT-ULSDCC-L3

ENT-ULSDCC-L4

RTRV-ULSDCC-L4

NAME

RTRV-ULSDCC-L4: Retrieve Upper Layer Stack DCC Layer 4

The **RTRV-ULSDCC-L4** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ULSDCC-L4:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-ULSDCC-L4** command is used to retrieve the parameters in Layer 4 of the OSI stack, many of which are provisioned by the **ENT-ULSDCC-L4** command. Layer 4 parameters include some TARP and the TARP Manual Adjacencies parameters.

The **RTRV-ULSDCC-L4** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-270 RTRV-ULSDCC-L4 Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 1. An AID range using the ALL keyword is allowed, but only within one shelf. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.

Table 3-270 RTRV-ULSDCC-L4 Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

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

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

Starting with Release 2.0, if the network element fully complies with the request, the following normal completion response is returned:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section. The output parameters listed there for the normal completion response also apply to the **RTRV-ULSDCC-L4** command.

Table 3-271 **`RTRV-ULSDCC-L4`** Output Parameters

Parameter Name	Description
aid	Access Identifier. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
spec_block	See the following table for all *spec_block* parameters.

Table 3-272 **`RTRV-ULSDCC-L4`** *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
l4ajnsap	This parameter is available starting in Release 1. This parameter specifies the NSAP address portion of an entry in the TARP Manual Adjacent network element. It is a 20 octet (40-digit hex) long address. Up to two NSAP addresses may be displayed.
	Starting in Release 4.0 the parameters *l4etclp*, *l4clim* and *l4cint* are no longer supported. The TARP clipping function is replaced by "External LAN TARP Storm Suppression" controlled by the parameter *extltss*. See **`ENT/RTRV-FECOM-LAN`**.
l4cint	This parameter is available starting in Release 1. This parameter sets the TARP clipping interval. Its value determines the time period in which the maximum number of PDUs, *l4clim*, can be forwarded before activating the clipping function. Values: 1 - 255 seconds in 1-second increments. The initial value is 12 seconds.
l4clim	This parameter is available starting in Release 1. This parameter sets the TARP clipping limit. It specifies the maximum number of PDUs which can be forwarded in the interval *l4cint* seconds. Values: 10 - 2550 PDUs in 10 PDU increments. The initial value is 240 PDUs.

Table 3-272 **`RTRV-ULSDCC-L4`** *spec_block* Output Parameters (Sheet 2 of 3)

Parameter Name	Description
l4etclp	This parameter is available starting in Release 1. This parameter is used to enable or disable the TARP clipping function. It allows TARP PDUs to be dropped whenever the forwarding rate exceeds the maximum as determined by *l4clim* and *l4cint*. Values: ■ DISABLE ■ ENABLE. The initial value is DISABLE.
l4etof	This parameter is available starting in Release 3. This parameter is used to enable or disable TARP Origination Functions. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE. Starting in Release 4.0, the initial value is ENABLE.
l4etpf	This parameter is available starting in Release 1. This parameter is used to enable or disable TARP Propagation Functions. Values: ■ ENABLE ■ DISABLE. The initial value is ENABLE.
l4etrf	This parameter is available starting in Release 1. This parameter is used to enable or disable TARP Responder Functions. Values: ■ ENABLE ■ DISABLE. The initial value is ENABLE.
l4letm	TARP Loop Detection Buffer Entry Timer. This parameter is available starting in Release 1. It sets the LDB time period for discarding TARP PDUs after a TARP PDU has been received with a sequence number equal to zero. Values: 1 - 10 minutes. The initial value is 5 minutes.

Table 3-272 **RTRV-ULSDCC-L4** *spec_block* Output Parameters (Sheet 3 of 3)

Parameter Name	Description
l4lftm	TARP Loop Detection Buffer Flush Timer. This parameter is available starting in Release 1. It sets the time period for flushing the TARP Loop Detection Buffer. Values: 1 - 1440 minutes. The initial value is 5 minutes.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **RTRV-ULSDCC-L4** command by the network element:

```
RTRV-ULSDCC-L4:LT-WBM:1-1-#-#-dccei-cp:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dccei-cp:l4lftm=5,l4letm=5"
   "1-1-#-#-dccei-cp:l4etpf=DISABLE,l4etrf=DISABLE"
   "1-1-#-#-dccei-cp:l4ajnsap=39840F80000000000000000000008006A11212300"
   "1-1-#-#-dccei-cp:l4ajnsap=39840F800000000000000000001998ABCD195600"
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-ULSDCC-L4** command.

RELATED TL1 MESSAGES

DLT-ULSDCC-L4

ENT-ULSDCC-L3

ENT-ULSDCC-L4

RTRV-ULSDCC-L3

NAME

RTRV-USER-SECU: Retrieve User Security

The **RTRV-USER-SECU** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-USER-SECU:*tid*:[*uid*]:*ctag*;

DESCRIPTION

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

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

INPUT PARAMETERS

Table 3-273 **RTRV-USER-SECU** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
uid	Specifies the user ID. This parameter is available starting in Release 1. Values: See the **ACT-USER** command for a description of this parameter. If this parameter is omitted, all ***uid***s are retrieved.

Table 3-273 RTRV-USER-SECU Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element has logins to report, the following normal completion response is returned:

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

OUTPUT PARAMETERS

Table 3-274 RTRV-USER-SECU Output Parameters

Parameter Name	Description
uid	User ID whose security parameters are to be retrieved. This parameter is available starting in Release 1. Values: Refer to the **ACT-USER** command.
spec_block	See the following table for all *spec_block* parameters.

Table 3-275 **RTRV-USER-SECU** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
alw_login	Allow Login. This parameter is available starting in Release 2.1. This parameter displays the enable/disable state of a User ID. Values: ■ YES User ID is enabled. ■ NO User ID is disabled.
initobs	Initialization Observability. This parameter is available starting in Release 2.1. This parameter allows the system to accept commands before it has completed initialization. Do not enable this parameter in networks using a Telcordia operations system. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE.
page	Password Aging Interval. This parameter is available starting in Release 2. This parameter specifies the period in days after which the user has to change the password of their account. A value of 0 disables the password aging interval function. Values: ■ 0, 7-999 days.
screen	Message Screening. Specifies what output messages are associated with the *uid*. This parameter is omitted if the user has none of these values. Any combination of these values, except NA, may be specified using ampersand (&). Values: ■ DBCHG ■ STCHG ■ PSCHG ■ ALARMS ■ NA ■ ALL

Table 3-275 RTRV-USER-SECU *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
tmout	Inactivity Timeout Period. This parameter is available starting in Release 2. If there are no messages between the user and the NE over the Timeout Period, the session is logged off. Expressed in minutes. A value of 0 disables the timeout function. Values: ■ 0-999 minutes.
ucpl	Specifies User Community Priority Level (UCPL). This parameter is available starting in Release 1. Input commands from users with higher priority are executed before commands from users with lower priority. Values: ■ Any integer ranging from 1 to 5.
uidclass	UID Class. This parameter is available starting in Release 2. This is the user class of a *uid*. Values: ■ MEMADMIN The user is a memory administration operations system. If *uidclass* is set to MEMADMIN, the value of *screen* can only be set to NA. ■ OTHER This is the initial value.
upc	Specifies the user privilege code UCFC/UCAL pair. Multiple UCFC/UCALs can be specified using single ampersands (&). Values: Pi, Mi, Ti, Si, PMi, Di where “i” is an integer ranging from 0 to 5, with i=0 implying that there is no authorization for the functional category. <u>Note</u>: ‘Di’ is a Lucent-only category which can only be used with a special password. *uids* with Di as the *upc* will be unable to set up a successful TL1 session. Upon executing the **ACT-USER** command, this user would be dumped into a debug session where he/she will not be able to pass the additional security tests and execute commands.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-USER-SECU:LT-WBM-789:kjlee:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   “kjlee::upc=P3&M3,ucpl=2,screen=DBCHG&ALARMS”
;
```

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

```
RTRV-USER-SECU:LT-WBM-789:ALL:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   “luc01::upc=S5,ucpl=2,screen=ALL”
   “luc02::upc=S5,ucpl=1,screen=STCHG”
   “bonda::upc=P3&M3,ucpl=2,screen=DBCHG&ALARMS”
   “kamm::upc=P3&M3&T3&PM3,ucpl=1,screen=PSCHG&STCHG”
   “vma::upc=T2,ucpl=2,screen=DBCHG&STCHG&PSCHG&ALARMS”
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **RTRV-USER-SECU** command.

RELATED TL1 MESSAGES

DLT-USER-SECU

ENT-USER-SECU

ED-USER-SECU

NAME

RTRV-USER: Retrieve User

The **RTRV-USER** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

Beginning with Release 2.0, the user privilege code is:
User Privilege Code (UCFC/UCAL): S2

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-USER:*tid*::*ctag*;

DESCRIPTION

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

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

INPUT PARAMETERS

Table 3-276 **RTRV-USER** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

The following normal completion response is returned:

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

OUTPUT PARAMETERS

Table 3-277 **RTRV-USER** Output Parameters

Parameter Name	Description
uid	User ID whose security parameters are to be retrieved. This parameter is available starting in Release 2. Values: Refer to the **ACT-USER** command.
spec_block	See the following table for all *spec_block* parameters.

Table 3-278 **RTRV-USER** *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
initobs	Initialization Observability. This parameter is available starting in Release 2.1. This parameter allows the system to accept commands before it has completed initialization. Do not enable this parameter in networks using a Telcordia operations system. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE.

Table 3-278 RTRV-USER *spec_block* Output Parameters (Sheet 2 of 3)

Parameter Name	Description
page	Password Aging Interval. This parameter is available starting in Release 2. This parameter specifies the period in days after which the user has to change the password of his or her account. A value of 0 disables the password aging interval function. Values: ■ 0, 7-999 days.
screen	Message Screening. This parameter is available starting in Release 2. Specifies what output messages are associated with the *uid*. This parameter is omitted if the user has none of these values. Any combination of these values, except NA, may be specified using ampersand (&). Values: ■ ALARMS ■ DBCHG ■ STCHG ■ PSCHG ■ NA ■ ALL ■ OWN This is displayed if the screen parameter has none of the other *screen* values.
ucpl	Specifies User Community Priority Level (UCPL). This parameter is available starting in Release 2. Input commands from users with higher priority are executed before commands from users with lower priority. Values: ■ Any integer ranging from 1 to 5.
uidclass	UID Class. This parameter is available starting in Release 2. This is the user class of a *uid*. Values: ■ MEMADMIN ■ OTHER.
upc	Specifies the user privilege code UCFC/UCAL pair. This parameter is available starting in Release 1.0. Multiple UCFC/UCALs can be specified using single ampersands (&). Values: Pi, Mi, Ti, Si, PMi, Di where “i” is an integer ranging from 0 to 5, with i=0 implying that there is no authorization for the functional category.

Table 3-278 **RTRV-USER** *spec_block* Output Parameters (Sheet 3 of 3)

Parameter Name	Description
	Note: 'Di' is a Lucent-only category which can only be used with a special password. *uids* with Di as the *upc* will be unable to set up a successful TL1 session. Upon executing the **ACT-USER** command, this user would be dumped into a debug session where he/she will not be able to pass the additional security tests and execute commands.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of **RTRV-USER** command by the network element:

```
RTRV-USER:LT-WBM-789::123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   "kamm::upc=P3&M3,ucpl=2,screen=DBCHG&ALARMS"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ED-USER

RTRV-USER-SECU

NAME

RTRV-VCG: Retrieve Virtual Concatenation Group

The **RTRV-VCG** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-VCG:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-VCG** command retrieves the attributes of a virtual concatenation group.

The **RTRV-VCG** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-279 **RTRV-VCG** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 3. Value: VCG AID. An "all" AID range is accepted, up to the shelf level. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element fully complies with the **RTRV-VCG** request, the following normal completion response is returned (only for Release 3.0):

```
   sid date time
M  ctag COMPLD
   "aid::spec_block"
      <1 or more of the line above>
   "aid:cvlan,VLAN"
      <1 or more of the line above, for another cvlan>
   "aid:mfiv,MFIV"
      <23 more of the line above, for other mfiv values>
      <1 or more of this entire block for another aid>
;
```

Starting in Release 4.0, if the network element fully complies with the **RTRV-VCG** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid::spec_block"
      <1 or more of the line above>
   "aid:cvlan,VLAN"
      <1 or more of the line above, for another cvlan>
   "aid:aidtrib,mfiv,MFIV"
      <1 or more of the line above, for another mfiv>
      <1 or more of this entire block for another aid>
;
```

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **RTRV-VCG** command.

Table 3-280 **`RTRV-VCG`** Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 3. Value: VCG AID. See the AID table in OSEG Appendix A.
aidtrib	Access Identifier. This parameter is available starting in Release 4. Value: VCG tributary AID. See the AID table in OSEG Appendix A.
mfiv	Multi-Frame Indicator Value, in microseconds. This parameter is available starting in Release 3. Values: 0 to 512000 in steps of 125.
spec_block	See the following table for all *spec_block* parameters.

Table 3-281 **`RTRV-VCG`** *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
enetpn	Ethernet Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
lcasmd	LCAS/VBA Mode Enable. This parameter is available starting in Release 4. Values: ■ ENABLE ■ DISABLE (initial value)
vcgrate	VCG Rate. This parameter is available starting in Release 3. Values: ■ VC3 ■ VC4.

Table 3-281 `RTRV-VCG` *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
vcgsz	VCG Size. This parameter is available starting in Release 3. Values: An integer representing the equivalent number of tributaries, as given by *vcgrate*, that make up the bandwidth. A change in VCG size will result in a `REPT DBCHG` message.
vmode	VCG Monitoring Mode. This parameter is available starting in Release 3. Values: ■ MON ■ NMON (initial value).
vpm	VCG PM Enable. This parameter is available starting in Release 3. Values: ■ ENABLE ■ DISABLE (initial value).

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **`RTRV-VCG`** command by the network element:

```
RTRV-VCG:LT-WBM:1-1-#-#-01-v1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-01-v1::enetpn=asap123,vcgsz=2,vmode=NMON"
   "1-1-#-#-01-v1::stgrpid=1,stgrpnm=stgn123,vpm=ENABLE"
   "1-1-#-#-01-v1::enettca=tca123"
   "1-1-#-#-01-v1:128,VLAN"
   "1-1-#-#-01-v1:129,VLAN"
;
```

The following example includes MFIV values in the output:

```
RTRV-VCG:LT-WBM:1-1-#-#-01-v1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-01-v1::enetpn=asap123,vcgsz=2,vmode=NMON"
   "1-1-#-#-01-v1::stgrpid=1,stgrpnm=stgn123,vpm=ENABLE"
   "1-1-#-#-01-v1::enettca=tca123"
   "1-1-#-#-01-v1:128,VLAN"
   "1-1-#-#-01-v1:129,VLAN"
   "1-1-#-#-01-v1:1-1-#-#-01-v1-2,125,MFIV"
   "1-1-#-#-01-v1:1-1-#-#-01-v1-3,500,MFIV"
   "1-1-#-#-01-v1:1-1-#-#-01-v1-5,375,MFIV"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ED-EPORT

ED-VCG

ED-VCGTRIB

RTRV-EPORT

RTRV-VCGTRIB

RTRV-VLAN

NAME

RTRV-VCGTRIB: Retrieve VCG Trib

The **RTRV-VCGTRIB** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-VCGTRIB-*modifier*:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-VCGTRIB** command retrieves the attributes of one or more virtual concatenation group tributaries.

The **RTRV-VCGTRIB** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-282 RTRV-VCGTRIB Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the RTRV-HDR command for input parameter syntax and description of this parameter.
aid	VCG Tributary AID. This parameter is available starting in Release 3. The "all" keyword is allowed up to the shelf level. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 3-282 **`RTRV-VCGTRIB`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
modifier	Modifier. Values: ■ **STS** ■ **VC** ■ **ALL**.

OUTPUT FORMAT

If the network element fully complies with the **`RTRV-VCGTRIB`** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "aid[,aidtype]::spec_block"
;
```

OUTPUT PARAMETERS

Refer to the **`RTRV-HDR`** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **`RTRV-VCGTRIB`** command.

Table 3-283 **`RTRV-VCGTRIB`** Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	VCG Tributary AID. This parameter is available starting in Release 3. See the AID table in OSEG Appendix A.
aidtype	AID Type. Values: ■ STS ■ VC

Table 3-283 **RTRV-VCGTRIB** Output Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following tables for all *spec_block* parameters.

Table 3-284 **RTRV-VCGTRIB** *spec_block* Output Parameters

Parameter Name	Description
aseqno	Accepted Sequence Number. This parameter is available starting in Release 3. Value: ■ 1 to 24.
tseqno	Transmitted Sequence Number. This parameter is available starting in Release 3. Value: ■ 1 to 24.

Table 3-285 **RTRV-VCGTRIB-rr** *spec_block* Parameters (Sheet 1 of 10)

rr	Parameter Name	Description
STS	*brstintvl*	Bursty Interval (starting in Release 3). Measurement period for determining bursty errors. See *brstthr*. Values: ■ 2 to 10 (seconds). Initial value: 7.
VC	*brstintvl*	See STS.
STS	*brstthr*	Bursty error Threshold (starting in Release 3). Threshold value for bursty errors. Values (as a percentage): ■ 0 - 100 at increments of 5. Initial value: 30.

Table 3-285 **`RTRV-VCGTRIB-rr`** *spec_block* Parameters (Sheet 2 of 10)

rr	Parameter Name	Description
VC	*brstthr*	Bursty error Threshold (starting in Release 3). Threshold value for bursty errors. Values (as a percentage): ■ 0 - 100 at increments of 5. Initial value: 30.
STS	*degthr*	Path BER threshold. This parameter is available starting in Release 3. Values (as exponents of 10): ■ -5 ■ -6 (initial value 10-6) ■ -7 ■ -8 ■ -9.
VC	*degthr*	Path BER threshold. This parameter is available starting in Release 3. Values (as exponents of 10): ■ -5 ■ -6 (initial value 10-6) ■ -7 ■ -8 ■ -9.
STS	*dexcthr*	Excessive Degrade Threshold. This parameter is available starting in Release 3. This is more severe than degthr, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value 10-3) ■ -4 ■ -5.

Table 3-285 **`RTRV-VCGTRIB-rr`** *spec_block* Parameters (Sheet 3 of 10)

rr	Parameter Name	Description
VC	*dexcthr*	Excessive Degrade Threshold. This parameter is available starting in Release 3. This is more severe than degthr, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value 10-3) ■ -4 ■ -5.
VC	*exphptrc*	Expected HP trace (J1) identifier. This parameter is available starting in Release 3. Values: ■ Hexadecimal digits Each byte is expressed as two hexadecimal digits. An example of a byte is 6D.
VC	*hptimmon*	High-order path trace (J1) identifier mismatch (TIM) monitor enable. This parameter is available starting in Release 3. Values: ■ ENABLE ■ DISABLE (initial value).
VC	*pmhpfeses*	Higher-order Path Far-end SES Threshold. This parameter is available starting in Release 3. See *pmhpneses.*
VC	*pmhpneses*	Higher-order Path Near-end SES Threshold. This parameter is available starting in Release 3. Values (as a percentage): ■ 0 - 50 at increments of 5 Initial value: 30 The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
STS	*ppm*	Path PM Enable. This parameter is available starting in Release 3.This enables/disables the STS-1 path parameters performance monitoring for both the near end and far end. Values: ■ ENABLE ■ DISABLE (initial value).

Table 3-285 **`RTRV-VCGTRIB-rr`** *spec_block* Parameters (Sheet 4 of 10)

rr	Parameter Name	Description
VC	*ppm*	Path PM Enable. This parameter is available starting in Release 3.This enables/disables the STS-1 path parameters performance monitoring for both the near end and far end. Values: ■ ENABLE ■ DISABLE (initial value).
STS	*ptca*	Path TCA. This parameter is available starting in Release 3. This parameter points a PM path TCA profile name to the designated AID. (See ENT-TCA-PROF command.) Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ NotReported (initial value).
VC	*ptca*	Path TCA. This parameter is available starting in Release 3. This parameter points a PM path TCA profile name to the designated AID. (See ENT-TCA-PROF command.) Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ NotReported (initial value).
STS	*ptffmcrs*	PTF FM Crossconnect Dependency. This parameter is available starting in Release 3. Values: ■ YES (initial value) ■ NO
VC	*ptffmcrs*	PTF FM Crossconnect Dependency. This parameter is available starting in Release 3. Values: ■ YES ■ NO (initial value).
STS	*ptpn*	Path Terminating Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.

Table 3-285 **`RTRV-VCGTRIB-rr`** *spec_block* Parameters (Sheet 5 of 10)

rr	Parameter Name	Description
VC	*ptpn*	Path Terminating Alarm Severity Assignment Profile. This parameter is available starting in Release 3. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
STS	*ptrc*	Path Trace. This parameter shows the value of the Path Trace Identifier on the incoming path overhead J1 byte of a non-terminated tributary. Values: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). ■ NA - not available. The length displayed is set with the *ptrcrfmt* parameter. The length of the transmitted path trace, may be different from the displayed length. If the received trace is smaller than indicated by *ptrcrfmt*, then it is padded with zeros; if longer then it is truncated. If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output.
VC	*ptrc*	Path Trace. This parameter shows the value of the Path Trace Identifier on the incoming path overhead J1 byte of a non-terminated tributary. Values: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). ■ NA - not available. The length displayed is set with the *ptrcrfmt* parameter. The length of the transmitted path trace, may be different from the displayed length. If the received trace is smaller than indicated by *ptrcrfmt*, then it is padded with zeros; if longer then it is truncated. If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output.

Table 3-285 **`RTRV-VCGTRIB-rr`** *spec_block* Parameters (Sheet 6 of 10)

rr	Parameter Name	Description
STS	*ptrcrfmt*	Starting in Release 3, the read format of J1, the incoming path trace (*ptrc*). Values: ■ 1 One byte value. A single byte (hexadecimal format using the printable T.50/ASCII character set). ■ 16 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. ■ 64 (initial value) 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed.
VC	*ptrcrfmt*	Starting in Release 3, the read format of J1, the incoming path trace (*ptrc*). Values: ■ 1 One byte value. A single byte (hexadecimal format using the printable T.50/ASCII character set). ■ 16 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. ■ 64 (initial value) 64-byte hexadecimal format using the printable T.50/ASCII character set, with the last two bytes being a carriage return, line feed.

Table 3-285 **`RTRV-VCGTRIB-rr`** *spec_block* Parameters (Sheet 7 of 10)

rr	Parameter Name	Description
STS	*ptrcwfmt*	Starting in 3, write format of J1, the outgoing path trace (*trc*). Values: ■ 1 (initial value) One byte value. The single byte (hexadecimal format using the printable T.50/ASCII character set) is repeated over and over, with no terminating/initial sequence. The initial value is 0x00, the ASCII null character. ■ 16 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. The initial value is a header byte followed by 15 0x00's (the ASCII null character). ■ 64 64-byte hexadecimal format using the printable T.50/ASCII character set. The initial value is 62 0x00's (the ASCII null character) followed by a carriage return, line feed.
VC	*ptrcwfmt*	Starting in 3, write format of J1, the outgoing path trace (*trc*). Values: ■ 1 (initial value) One byte value. The single byte (hexadecimal format using the printable T.50/ASCII character set) is repeated over and over, with no terminating/initial sequence. The initial value is 0x00, the ASCII null character. ■ 16 16-byte hexadecimal format using the printable T.50/ASCII character set, with the first byte being a CRC-7. The initial value is a header byte followed by 15 0x00's (the ASCII null character). ■ 64 64-byte hexadecimal format using the printable T.50/ASCII character set. The initial value is 62 0x00's (the ASCII null character) followed by a carriage return, line feed.

Table 3-285 RTRV-VCGTRIB-rr *spec_block* Parameters (Sheet 8 of 10)

rr	Parameter Name	Description
STS	*rsiglb*	Received Signal Label (starting in Release 3). This parameter shows the value of the received C2 signal label for the terminated DS3 service. Values: ■ 2-digit hex. ■ NA - Not Available. If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output.
VC	*rsiglb*	Received Signal Label (starting in Release 3). This parameter shows the value of the received C2 signal label for the terminated DS3 service. Values: ■ 2-digit hex. ■ NA - Not Available. If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output.
STS	*sdsfmode*	Signal Degrade/Signal Fail Mode. This parameter is available starting in Release 3. Values: ■ POISSON ■ BURST (initial value).
VC	*sdsfmode*	Signal Degrade/Signal Fail Mode. This parameter is available starting in Release 3. Values: ■ POISSON ■ BURST (initial value).
STS	*tmonmd*	Tributary Monitoring Mode. This parameter is available starting in Release 3. This parameter sets the mode of the tributary. Values: ■ MON Indicates that alarm monitoring is taking place on the tributary. ■ NMON (Initial value) Means that alarm monitoring is not occurring on the tributary.

Table 3-285 **RTRV-VCGTRIB-rr** *spec_block* Parameters (Sheet 9 of 10)

rr	Parameter Name	Description
VC	*tmonmd*	Tributary Monitoring Mode. This parameter is available starting in Release 3. This parameter sets the mode of the tributary. Values: ■ MON Indicates that alarm monitoring is taking place on the tributary. ■ NMON (Initial value) Means that alarm monitoring is not occurring on the tributary.
STS	*trc*	Outgoing Path Trace. This parameter is available starting in Release 3. This identifies the path trace (J1) message to be transmitted. Values: ■ Hexadecimal digits Each byte is expressed as two hexadecimal digits. An example of a byte is 6D. The length is set with the *ptrcwfmt* parameter. ■ 00 (Initial value) 0x00 is the ASCII null character).
VC	*trc*	Outgoing Path Trace. This parameter is available starting in Release 3. This identifies the path trace (J1) message to be transmitted. Values: ■ Hexadecimal digits Each byte is expressed as two hexadecimal digits. An example of a byte is 6D. The length is set with the *ptrcwfmt* parameter. ■ 00 (Initial value) 0x00 is the ASCII null character).
STS	*tsiglb*	Transmitted Signal Label (starting in Release 3). This parameter shows the value of the transmitted C2 signal label for the terminated DS3 service. Values: ■ 2-digit hex ■ NA - Not Available. The values are defined in GR-253, Table 3-2 (in the absence of errors), and Table 3-3 (in the presence of errors). If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output.

Table 3-285 **`RTRV-VCGTRIB-rr`** *spec_block* Parameters (Sheet 10 of 10)

rr	Parameter Name	Description
VC	*tsiglb*	Transmitted Signal Label (starting in Release 3). This parameter shows the value of the transmitted C2 signal label for the terminated DS3 service. Values: ■ 2-digit hex ■ NA - Not Available. The values are defined in GR-253, Table 3-2 (in the absence of errors), and Table 3-3 (in the presence of errors). If a value for this parameter is not available, NA may be returned as a value or the parameter may be omitted from the output.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **`RTRV-VCGTRIB`** command by the network element:

```
RTRV-VCGTRIB-ALL:LT-WBM:1-1-#-#-01-v1-1:123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-01-v1-1::mfiv=1,seqno=2"
   "1-1-#-#-01-v1-1,VC::brstintvl=7"
;
```

ERROR RESPONSES

Refer to the **`RTRV-HDR`** command **ERROR RESPONSES** section. The error responses listed there also apply to the **`RTRV-VCGTRIB`** command.

RELATED TL1 MESSAGES

`ED-EPORT`

`ED-VCG`

`ED-VCGTRIB`

`RTRV-EPORT`

RTRV-VCG

RTRV-VLAN

NAME

RTRV-VLAN: Retrieve VLAN

The **RTRV-VLAN** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-VLAN:*tid*:*aid*:*ctag*::[*vlanid*];

DESCRIPTION

The **RTRV-VLAN** command retrieves the attributes of one or more VLANs.

General Description of VCG and ethernet TL1 commands

Parameters that describe either ethernet or VCG signals, are modified via the **ED-EPORT** and **ED-VCG** commands respectively. For both commands, the alarm levels for the incoming customer signals are described by an Ethernet Alarm Severity Assignment Profile (type ENET).

The ethernet port signals and the VCG signals and are processed into VCG tributaries which can be cross connected like other tributaries. The alarm levels for the VCG tributaries are described by a Path Terminating Alarm Severity Assignment Profile (type PT or PTSDH). Properties of VCG tributaries can be modified by the **ED-VCGTRIB** command.

RTRV-EPORT, **RTRV-VCG**, and **RTRV-VCGTRIB** can be used to retrieve parameter values. **RTRV-VLAN** retrieves the attributes of one or more VLANs (virtual LAN) which are embedded in the VCG or ethernet signals.

The **RTRV-VLAN** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-286 `RTRV-VLAN` Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the `RTRV-HDR` command for input parameter syntax and description of this parameter.
aid	Access Identifier. This parameter is available starting in Release 3. Value: slot AID. An “all” range is allowed, up to the shelf level. See the AID table is OSEG Appendix A.
ctag	Correlation Tag. Refer to the `RTRV-HDR` command for the input parameter syntax and description of this parameter.
vlanid	VLAN Identifier. This parameter is available starting in Release 3. If this parameter is omitted, information on all the VLANs associated with the values of the ***aid*** parameter is returned. Value: An integer in the range **1**-**4094**.

OUTPUT FORMAT

If the network element fully complies with the **`RTRV-VLAN`** request, the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   "vlanid:epaid,EP"
    <1 or more of the line above, for another epaid>
   "vlanid:vcgaid,VCG"
    <1 or more of the line above, for another vcgaid>
    <1 or more of this entire block, for another vlanid>
;
```

The output is sorted by the ***vlanid*** parameter. This means that the output lines are grouped together by ***vlanid***, and the ***vlanid*** values are ordered numerically from lowest to highest.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** section. The output parameters listed there also apply to the **RTRV-VLAN** command.

Table 3-287 **RTRV-VLAN** Output Parameters

Parameter Name	Description
epaid	Ethernet Port AID. This parameter is available starting in Release 3. Values: Ethernet port AID. See the AID table in OSEG Appendix A.
vcgaid	VCG AID. This parameter is available starting in Release 3. Values: VCG AID. See the AID table in OSEG Appendix A.
vlanid	VLAN Identifier. This parameter is available starting in Release 3. Value: An integer in the range 1-4094.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-VLAN** command by the network element:

```
RTRV-VLAN:LT-PF-2000::123456::123;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "123:1-1-#-#-01-1,EP"
   "123:1-1-#-#-01-2,EP"
   "123:1-1-#-#-01-v1,VCG"
   "123:1-1-#-#-01-v2,VCG"
;
```

ERROR RESPONSES

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

If the named VLAN does not exist, the following error response is returned:

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

RELATED TL1 MESSAGES

ED-EPORT

ED-VCG

ED-VCGTRIB

RTRV-EPORT

RTRV-VCG

RTRV-VCGTRIB

NAME

SET-ATTR-ALM: Set Attribute Alarm

The **SET-ATTR-ALM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

SET-ATTR-ALM:*tid*::*ctag*:::[*spec_block*];

DESCRIPTION

SET-ATTR-ALM can be used to provision alarm delay and the alarm clear delay for two sets of alarms: facility alarm group (all communication notifications) and equipment alarm group (all equipment and processor error notifications). The groups can be provisioned independently. Alarm delay and clear times can be provisioned independently.

If a ***spec_block*** parameter is not specified, the **SET-ATTR-ALM** command returns **COMPLD**, and the parameters retain their previous values.

The **SET-ATTR-ALM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-288 **SET-ATTR-ALM** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameters syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-288 **SET-ATTR-ALM** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	Specific Block. The ***spec_block*** and the parameters within it are all optional. This parameter field is used for modification of alarm attributes. Parameters within the ***spec_block*** are specified using a name-defined construct of: PARAMETER=value in a comma separated list. The ***spec_block*** may contain none or more of the following parameters. See the following table for all ***spec_block*** parameters.

Table 3-289 **SET-ATTR-ALM** ***spec_block*** Input Parameters

Parameter Name	Description
almdeleqpt	Alarm Delay Equipment. Time in seconds an equipment event has to be continuously present before an alarm is set. Initial value for this parameter is **0**. If the value is omitted, the current value is not modified. Values: **0**-**60** AND **almdeleqpt** <= **clrdelfclt** AND **almdeleqpt** <= **clrdeleqpt**.
almdelfclt	Alarm Delay Facility. Time in seconds a facility event has to be continuously present before an alarm is set. Initial value for this parameter is **0**. If the value is omitted, the current value is not modified. Value: **0** OR >= **10** AND <= **60** AND **almdelfclt** <= **clrdelfclt**.
clrdeleqpt	Clear Delay Equipment. Time in seconds an equipment event has to be continuously absent before an alarm is cleared. Initial value for this parameter is **0**. If the value is omitted, the current value is not modified. Values: **0**-**60**.
clrdelfclt	Clear Delay Facility.Time in seconds a facility event has to be continuously absent before an alarm is cleared. Initial value for this parameter is **0**. If the value is omitted, the current value is not modified. Values: **0**-**60**.

OUTPUT FORMAT

If the network element fully complies with the **SET-ATTR-ALM** request, the normal completion response is returned as shown below:

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

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command in the **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **SET-ATTR-ALM** command.

EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-ALM** command where the Alarm Delay Facility value has been set to 20 seconds, and the Clear Delay Facility value has been set to 0 seconds:

```
SET-ATTR-ALM:LT-WBM::123456:::almdelfclt=12,clrdelfclt=12;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also apply to the **SET-ATTR-ALM** command.

The **Input, Data Not Consistent** error response is shown below:

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

The following list identifies conditions that will cause an IDNC error response:

- ***almdelfclt*** assigned a value 1, 2, …, 8, 9
- ***almdelfclt*** > *60*
- ***clrdelfclt*** > *60*
- ***clrdelfclt*** < ***almdelfclt***
- ***almdeleqpt*** > *60*
- ***clrdeleqpt*** > *60*
- ***clrdeleqpt*** < ***almdeleqpt***
- ***clrdelfclt*** < ***almdeleqpt***.

RELATED TL1 MESSAGES

`RTRV-ATTR-ALM`

NAME

SET-ATTR-CONT: Set Attribute Control

The **SET-ATTR-CONT** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

SET-ATTR-CONT:*tid*:*aid*:*ctag*::*contmsg*,*durmode*,*initcstat*;

DESCRIPTION

The **SET-ATTR-CONT** command can be initiated by users to set the description associated with an external discrete control. The **RTRV-ATTR-CONT** command can be used to retrieve these descriptions, for example, a remote user can verify that a control is associated with a fan (and not a sprinkler) before operating the control. **OPR-EXT-CONT** can be used to operate the control. For example, **MISC_OUT3** could operate a relay that turns on a fan. **RLS-EXT-CONT** can be used to release the control. For example, releasing "**MISC_OUT3**" could result in a fan being turned off.

Relation between miscellaneous discrete controls and environment points:

1. For miscellaneous discrete controls, it is the craft, by using **OPR-EXT-CONT** or **RLS-EXT-CONT**, that causes a change in the environment (perhaps operating a relay to turn on a fan).
2. For environmental points, it is the environment that causes a change. This change may be used to operate or release a relay which in turn signals the software to issue an alarm or event.

Whether an environmental point causes the software to issue an alarm or event is specified via the **SET-ATTR-ENV** command via the parameter "***ntfcncde***." Because miscellaneous discrete controls do not, at least directly, cause the software to issue an alarm/event, the **SET-ATTR-CONT** command does not have an "***ntfcncde***" parameter.

The **SET-ATTR-CONT** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-290 **SET-ATTR-CONT** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to **RTRV-HDR** for input parameters syntax and description of this parameter.
aid	Access Identifier. The ***aid*** identifies the external miscellaneous discrete control for which attributes are being set. The ***aid*** value cannot be omitted. Values: (See the AID table in the OSEG Appendix A.) ■ **MISC-OUT1** … **MISC-OUT8**.
ctag	Correlation Tag. Refer to **RTRV-HDR** for the input parameter syntax and description of this parameter.
contmsg	For the **SET-ATTR-CONT** command, the ***contmsg*** 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. ***contmsg*** is case sensitive and is enclosed with escaped quotes (\"). The ***contmsg*** field cannot be omitted, but an empty string (\"\") is allowed.
durmode	’dur’ mode. This parameter defines in which mode the device connected to the MDO is expected to be operated. Values: ■ **CONTS** Continuous duration ■ **MNTRY** Momentary duration of 300 ms (Initial value is **MNTRY**).
initcstat	Initial Control State. This parameter defines the state the MDO must have in order to put the connected device in the “off”-state. Values: ■ **OPER** ■ **RLS** (Initial value).

OUTPUT FORMAT

If the network element fully complies with the **SET-ATTR-CONT** request, the normal completion response is returned. Also, if the **SET-ATTR-CONT** command does not alter the already provisioned description, the network element will not deny the **SET-ATTR-CONT** command. Instead, the system will respond with the normal completion message as shown below:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-CONT** command that provisions the text string for miscellaneous discrete control 3:

```
SET-ATTR-CONT:LT-WBM:MISC_OUT3:123456::"fan 3",CONTS,RLS;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **SET-ATTR-CONT** command. Additional errors are listed below.

RELATED TL1 MESSAGES

RTRV-ATTR-CONT

OPR-EXT-CONT

RLS-EXT-CONT

NAME

SET-ATTR-ENV: Set Attribute Environment

The **SET-ATTR-ENV** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

SET-ATTR-ENV:*tid*:*aid*:*ctag*::,,*envmsg*:*spec_block*;

DESCRIPTION

The **SET-ATTR-ENV** command can be used to set the description of an environmental point. It also can be used to assign an ASAP profile to the environmental point. Assigning a profile to an environmental point is equivalent to assigning an alarm level.

If no ***spec_block*** parameter is set, then the profile that is assigned to the environmental point is unchanged. If the **SET-ATTR-ENV** command has never been used to assign a profile to the environmental point, then it uses the profile named “Default.”

The **RTRV-ATTR-ENV** command can be used to retrieve the description of an environmental point. It also indicates the ASAP profile that was assigned to point. That profile specifies the alarm level.

Relation between miscellaneous discrete controls and environmental points:

1. For miscellaneous discrete controls, it is the craft (by using the **OPR-EXT-CONT** or **RLS-EXT-CONT** command) that causes a change in the environment (perhaps operating a relay to turn on a fan). Because the miscellaneous discrete controls act on the environment, they are termed output variables and are represented by AIDs of the format output miscellaneous discrete AID (see the AID table in OSEG Appendix A).
2. For environmental points, it is the environment that causes a change. This change may be used to operate or release a relay which in turn signals the software to issue an alarm or event. Because the environmental points act

on the system, they are termed input variables and are represented by AIDs of the format input miscellaneous discrete AID (see the AID table in OSEG Appendix A).

Relation between ASAP profiles and environmental points: Assigning an ASAP profile to the environmental point is equivalent to assigning an alarm level to the environmental point. The value of the alarm level, which depends upon the specific profile that is assigned, can be **CR**, **MJ**, **MN**, **NA**, **NR**. As an example, assume the **SET-ATTR-ENV** command is used to assign the profile “**env_mn**” to an environmental point. If this profile has its alarm level equal to **MN**, activating the environmental point will cause an alarm of level **MN**. To learn how an ASAP profile can have its alarm level set, see the **ED-ASAP-PROF** command.

Detail: an environmental ASAP profile has 16 parameters to represent the alarm levels of 16 environmental points. The parameter that is used by **SET-ATTR-ENV** is a function of the AID specified for the command.

For alarm level **CR**, **MJ**, and **MN**, if the environmental point is set, an event will be reported via the **REPT ALM ENV** command. For alarm level **NA**, if the environmental point is set, an event will be reported via the **REPT EVT** command. For alarm level **NR**, if the environment point is set, nothing is reported. Environmental conditions generate both a “declare” autonomous message and a “clear” autonomous message.

The **SET-ATTR-ENV** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-291 **SET-ATTR-ENV** Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameters syntax and description of this parameter.
aid	Access Identifier. The ***aid*** identifies the environment point. (See the AID table in OSEG Appendix A.) Values: Input miscellaneous discrete AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
envmsg	Environment Message. This is the condition description to be associated with the addressed environmental point. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 26 characters. Must be included in quotes. Ex: “open door”

Table 3-291 **SET-ATTR-ENV** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following table for all ***spec_block*** parameters.

Table 3-292 **SET-ATTR-ENV** ***spec_block*** Input Parameters

Parameter Name	Description
pfname	Profile Name. This indicates the ASAP profile that should be assigned to this environmental point. Value: See the **ENT-ASAP-PROF** command for the values of this parameter. The profile type is ENV. The profile contains alarm levels for each of the miscellaneous discrete inputs. The one that corresponds to the input AID is used. For example, if the input AID is *misc_in2* then the alarm level of the profile's parameter that is called *misc_in2* is assigned to the environmental point.

OUTPUT FORMAT

If the network element fully complies with the **SET-ATTR-ENV** request, the normal completion response is returned. Also, If the **SET-ATTR-ENV** command does not alter the already provisioned description, the network element will not deny the command. Instead, the system will respond with the normal completion message as shown below:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a **SET-ATTR-ENV** command where the profile name is set to env_mn, and the environment message is set to open door:

```
SET-ATTR-ENV:LT-WBM:misc_in7:123456::,,"open door":pfname=env_mn;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **SET-ATTR-ENV** command. Additional errors are listed below.

RELATED TL1 MESSAGES

ED-ASAP-PROF

ENT-ASAP-PROF

REPT ALM ENV

RTRV-ALM-ENV

RTRV-ATTR-ENV

NAME

SET-SID: Set Target/Source Identification

The **SET-SID** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

SET-SID:*tid*::*ctag*::*newsid*;

DESCRIPTION

SET-SID can be used to change the Target/Source identification of the network element. The **SET-SID** command is denied if the system is not in maintenance condition. Maintenance condition applies only to NE. For NCC, the command can be run without restriction, but will result in a system reset.

The **SET-SID** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-293 SET-SID Input Parameters (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to **RTRV-HDR** for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to **RTRV-HDR** for the input parameter syntax and description of this parameter.

Table 3-293 **`SET-SID`** Input Parameters (Sheet 2 of 2)

Parameter Name	Description
newsid	Target/Source Identification. This is the new name of the network element. Future commands must use this name instead of the current name. That is, ***newsid*** replaces ***tid***. Refer to **`RTRV-HDR`** for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the network element fully complies with the **`SET-SID`** request, the normal completion response is returned as shown below:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following shows an example of the **`SET-SID`** command where the target/source identification of the network element was changed to **CHICAGO-2**:

```
SET-SID:LT-WBM::123456::CHICAGO-2;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **SET-SID** command.

RELATED TL1 MESSAGES

None.

NAME

SET-SYNCN: Set Synchronization

The **SET-SYNCN** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

SET-SYNCN:*tid*::*ctag*::[*clkmod*]:*spec_block*;

DESCRIPTION

The **SET-SYNCN** command is used to provision system timing clock mode, assigned timing references, and external input/output timing port attributes. Provisioning of multiple timing reference port aids requires multiple executions of the command. The **SET-SYNCN** command is used not only to establish system timing attributes but also to modify or remove them.

The **SET-SYNCN** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-294 **SET-SYNCN** Input Parameters for System Timing (Sheet 1 of 2)

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-294 `SET-SYNCN` Input Parameters for System Timing (Sheet 2 of 2)

Parameter Name	Description
clkmod	Clockmod. This parameter is related to system timing. It defines a state of the clock that is related to how it is referenced. Only the ***clkmod*** parameter is required to provision the system into free-running mode. Values: ■ **FREE-RUNNING** (initial value) ■ **LOCKED**.
spec_block	The following ***spec_block*** parameters are related to system timing. See the following tables for all the ***spec_block*** parameters.

Table 3-295 `SET-SYNCN` ***spec_block*** Input Parameters for System Timing (Sheet 1 of 2)

Parameter Name	Description
syncmsg	System SSM (Sync. Status Messaging) Mode. Starting in Release 2.1, this parameter enables or disables the SSM protocol. The parameter provisions the automatic reference selection process to use the incoming QLs in QL-enabled mode or to ignore them in QL-disabled mode. Values: ■ **DISABLE** ■ **ENABLE** (initial value). When provisioned for **ENABLE**, sync messages will be sent on optical transmit interfaces. When provisioned for **DISABLE**, the message “**DNU**” (Do not Use) will be transmitted from the optical interface
timing	Starting in Release 2.1, this parameter sets a timing Alarm Severity Assignment Profile (ASAP) name to which the system timing points. This is an alphanumerical string with a maximum of 24 characters. Initial Value: **default**.

Table 3-295 **SET-SYNCN** ***spec_block*** Input Parameters for System Timing (Sheet 2 of 2)

Parameter Name	Description
wtr	Wait To Restore. This parameter specifies the provisioned wait to restore time used for all timing ports for revertive switching. This is the amount of time it takes for a reference to be used in a reference selection mechanism after the failure of the reference is cleared. Values: ■ **0** ■ **20SEC** (initial value) ■ **1MIN** ■ **2MIN**…**60MIN** ■ **99** (infinite).

Table 3-296 **SET-SYNCN** ***spec_block*** Input Parameters for Assigned Timing Reference (Sheet 1 of 3)

Parameter Name	Description
ql_prov	QL Provisioned. Starting in Release 2.1, this parameter is related to all assigned timing references (i.e., the line timing references and external timing references). It is the provisioned quality level sync message value that will be received on timing references. Values: ■ **AUTO** (initial value for line references, implies sync message support). ■ **PRC** ■ **SSUT** ■ **SSUL** ■ **SEC**. The initial value for external timing references depends on the value of the parameter ***ext_if*** . The initial value is **AUTO** if ***ext_if*** is equal to **2Mbit-framed**; it is **SSUT** if ***ext_if*** is equal to **2MHz** or **2Mbit-unframed**.

Table 3-296 **`SET-SYNCN`** ***spec_block*** Input Parameters for Assigned Timing Reference (Sheet 2 of 3)

Parameter Name	Description
syncref_pri	System Timing Reference Priority. This parameter defines the priorities for assigned references (***syncref_prov***). When multiple input references have been given the same priority value, it implies non-revertive switching between the associated references. Otherwise, it implies revertive switching to the reference with the highest assigned priority. Values: ■ **DISABLE** (initial value) indicates this reference is not used. ■ **1** Number **1** indicates the highest priority. ■ **2** The greater the number, the lower the priority. ■ **3** (starting in Release 1.0) ■ **4** (starting in Release 2.1) ■ **5** through **8** (starting in Release 3.0).
syncref_prov	Assigned Timing Reference AID. This parameter defines the timing references that can be provisioned. Two external inputs may be used by the system for automatic reconfiguration. Values: ■ **EXTREF1** ■ **EXTREF2** ■ **LINE1** (starting in Release 1) ■ **LINE2** (starting in Release 2.1) ■ **LINE3** (starting in Release 3.0) ■ **LINE4** (starting in Release 3.0) ■ **LINE5** (starting in Release 3.0) ■ **LINE6** (starting in Release 3.0).
tref_aid	Timing reference assigned port AID. This parameter is the designated port AID of the ***syncref_prov*** parameter. For External Timing Input Port Provisioning, both external timing inputs must have equal format and mixed configurations are not supported, user needs to select both external timing reference input ports

Table 3-296 **`SET-SYNCN`** ***spec_block*** Input Parameters for Assigned Timing Reference (Sheet 3 of 3)

Parameter Name	Description
	Values: ■ **EXTTMG0** (port AID of **EXTREF1**) ■ **EXTTMG1** (port AID of **EXTREF2**) ■ **NOT-CONNECTED** (initial value). ■ port AID of **LINE1** ■ port AID of **LINE2** (starting in Release 2.1) ■ port AID of **LINE3** (starting in Release 3.0) ■ port AID of **LINE4** (starting in Release 3.0) ■ port AID of **LINE5** (starting in Release 3.0) ■ port AID of **LINE6** (starting in Release 3.0).

Table 3-297 **`SET-SYNCN`** ***spec_block*** Input Parameters for Port Provisioning (Sheet 1 of 4)

Parameter Name	Description
ext_if	This indicates the timing input format. For External Timing Input Port Provisioning, both external timing inputs must have equal format and mixed configurations are not supported, user needs to select both external timing reference input ports. Value(s): ■ **2MHz** (starting in Release 1.0) ■ **2Mbit-framed** (starting in Release 1.0) ■ **2Mbit-unframed** (starting in Release 1.0). The initial value is **2MHZ**.
ext_imped	External Timing Port Impedance. Starting in Release 2.1, this parameter is for setting the impedance of the external timing output ports. The following values are measured by ohm. Values: ■ **120** ■ **75** (initial value).

Table 3-297 **SET-SYNCN *spec_block*** Input Parameters for Port Provisioning (Sheet 2 of 4)

Parameter Name	Description
ext_of	This parameter indicates the EXTREF timing output format. Values: ■ **2MHz** (starting in Release 2.1) ■ **2Mbit-framed** (starting in Release 2.1) ■ **2Mbit-unframed** (starting in Release 2.1). The initial value is **2MHZ**.
extout_en	External timing output enabling/disabling. Starting in Release 2.1, this parameter specifies whether the first external timing output is enabled or disabled. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
extout_pri	Starting in Release 3, this parameter defines the derived external timing output priority. Values: ■ **1** through **6** — Number **1** indicates the highest priority. Number **6** indicates the lowest priority. ■ **DISABLE** — (initial value) indicates the reference is not used.
extout_prov	Starting in Release 3.0, this parameter specifies the signal source of the external output timing. The value SETG means the system clock. The value TLS means the timing link switch of the external timing output. Value(s): ■ **SETG** (initial value) ■ **TLS**.
extout_ssm	AIS (AISMODE) or DNU/DUS (QLMODE) is sent when the signal quality level is below the value set with ***qlout_tais*** or when ***frcdus*** is enabled. Values: ■ **AISMODE** (initial value) ■ **QLMODE**.

Table 3-297 **`SET-SYNCN` *spec_block*** Input Parameters for Port Provisioning (Sheet 3 of 4)

Parameter Name	Description
frcdus	Starting in Release 3, this parameter indicates the Sync Message Force DUS Enable. Values: ■ **DISABLE** (initial value) ■ **ENABLE**.
loopdelay	Timing regenerator loop delay. This parameter indicates the delay in the SASE/BITS loop operation. The values are represented by seconds with a resolution of 1 second. Values: ■ **0** … **60** seconds. The default value is **10** seconds.
qlout_tais	Acceptance QL for Output Threshold AIS. Starting in Release 2.1, this parameter is the provisioned level for the incoming sync messaging in the reference signal. When the incoming message is at or below this level, the signal sent in the derived timing output depends on the setting of the ***extout_ssm*** parameter. Values: ■ **PRC** ■ **SSUT** ■ **SSUL** ■ **SEC** (initial value).
regen_loop	Timing Regenerator Loop Enable. This parameter specifies if the timing signal is regenerated by a SASE/BITS loopback. When this parameter is not set to DISABLE, the sync message “DNU” (Do not Use) will be inserted in the traffic output port associated with the traffic input port used as source for the station clock output. Values: ■ **DISABLE** (initial value) ■ **EXTREF1** ■ **EXTREF2** ■ **BOTH**.

Table 3-297 **`SET-SYNCN`** ***spec_block*** Input Parameters for Port Provisioning (Sheet 4 of 4)

Parameter Name	Description
tinpaid	Starting in Release 1, this parameter is for external timing input port AID. Values: ■ **EXTTMG0** ■ **EXTTMG1**.
toutpaid	Starting in Release 2.1, this parameter is for external timing output port AID. Values: ■ **EXTTMG0_OUT**

OUTPUT FORMAT

After receiving the **`SET-SYNCN`** command, the following normal system response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following is an example of the **SET-SYNCN** command:

```
SET-SYNCN:LT-WBM:123456::locked:syncref_prov=EXTREF1,tref_aid=EXTTMG0,
syncref_pri=1,wtr=20sec,ext_if=esf,timing=att;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also apply to the **SET-SYNCN** command.

RELATED TL1 MESSAGES

OPR-SYNCNSW

RLS-SYNCNSW

RTRV-SYNCN

NAME

TEST-ALM: Test Alarm

The **TEST-ALM** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

TEST-ALM:*tid*:*aid*:*ctag*::[*repeat*];

DESCRIPTION

The **TEST-ALM** command can be used to test the ability of the system to control the office alarms.

The indicators controlled by the **TEST-ALM** command are the CR, MJ, and MN visual and audible office alarm outputs and the corresponding LEDs (CR, MJ, MN) on the shelf's user panel.

A shelf may be provisioned such that its office alarms are reported by another shelf. The shelves are not constrained to be in the same aisle. If this test is applied to such a shelf, the office visual alarms will be reported by the remote shelf, but the alarm LEDs will still be reported by the shelf addressed by **TEST-ALM**. Only the SYS-CTL shelf will be wired to the AUDIBLE office alarms. If this test is applied to a shelf other than the system controller, then the audible alarms will also sound as in test-alarms.

After the alarm test is complete, the alarms will be set to reflect the system's status.

The **TEST-ALM** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-298 **`TEST-ALM`** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. Identifies the bay, shelf where the office alarms are to be tested. The general format of the AID is: shelf AID. A range is not allowed. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **`RTRV-HDR`** command for the input parameter syntax and description of this parameter.
repeat	Number of times the test should repeat. It has the value: **1**-**10**. If the parameter is omitted, then ***repeat*** is set to **1**.

If ***repeat*** is either omitted or **1**, execution of **`TEST-ALM`** causes the following to occur:

a. CRITICAL, MAJOR, MINOR simultaneously off for 5 seconds
b. CRITICAL On for 5 seconds, then set to off
c. MAJOR On for 5 seconds, then set to off
d. MINOR On for 5 seconds, then set to off
e. CRITICAL, MAJOR, MINOR remain off for 5 seconds.

The above takes 25 seconds.

The ***repeat*** input parameter, to be described later, allows the test to be repeated (steps b through d) for a specified number of cycles.

If ***repeat*** is greater than **1**, the following actions are repeated:

- CRITICAL On for 5 seconds, then set to off
- MAJOR On for 5 seconds, then set to off
- MINOR On for 5 seconds, then set to off.

That is, the sequence is OFF, CR, MJ, MN, CR, MJ, MN, …, CR, MJ, MN, OFF, normal.

Since **TEST-ALM** always starts with all alarms off for 5 seconds and also ends that way, n cycles of **TEST-ALM** take 10 seconds + (15 x n) seconds.

- Transitioning to a test phase which has all indicators off, turns off ACO and pushing ACO has no effect.
- During a test phase when an indicator is on (e.g., CRITICAL is on), pushing ACO silences the audible alarm.
- If the ACO was on when the test began and if the alarm state of the system is unchanged when the test ends, then ACO will be left on.

If ACO is used to silence the audible alarm during a test phase when an indicator is on (e.g., CRITICAL), the affect of the ACO ends when that test phase ends. During the next test phase when an indicator is on (e.g., MAJOR), ACO would have to be used again to silence the audible alarm).

OUTPUT FORMAT

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

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

COMPLD will be returned when the test is finished. This may take quite a while depending on the value of ***repeat***.

OUTPUT PARAMETERS

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

The output does not indicate PASS/FAIL, it is up to the observer to determine whether or not the test passed.

EXAMPLE INPUT/OUTPUT

The following example shows a **TEST-ALM** command that tests alarms twice for bay 1 shelf 1. This test takes approximately 40 seconds to return COMPLD.

```
TEST-ALM:LT-WBM:1-1:123456::2;

   LT-WBM 98-01-01 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command **ERROR RESPONSES** section. The error responses listed there also pertain to the **TEST-ALM** command.

RELATED TL1 MESSAGES

None.

NAME

TEST-LED: Test LED

The **TEST-LED** command is available beginning in:

- WaveStar TDM 10G (STM-64), Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M2

Beginning with Release 3.0, the UPC is:
User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

TEST-LED:*tid*:*aid*:*ctag*::[*repeat*];

DESCRIPTION

The **TEST-LED** command can be used to test the LEDs in the system's shelves and the LEDs in the User Panel.

The test overrules the current state of the LEDs, to allow for ON and OFF for all LEDs. The previous state will be restored after the test completes, which means that any changes to the internal state during the test, are not reflected after the test.
E.g., pulling an active switch pack causes a pack-protection switchover, but if done during the LED-TEST, the new condition will not be displayed.

The test effects a shelf's LEDs. During one cycle of the test, the LEDs are turned on 2 seconds, off 2 seconds, on 2 seconds, off 2 seconds, etc., for a total of 3 times. They are then restored to normal operation.

One cycle of the test takes 12 seconds.

The shelf's LEDs include the LEDs of all boards that are inserted in the shelf and also all LEDs (except the Power On LED) on the User Panel, if it exists.

The ***repeat*** input parameter, to be described later, allows the test to be repeated for a specified number of cycles.

Execution of the **TEST-LED** command will result in the creation of an "alarm test" failure event. This will result in an equipment alarm notification with probable cause of Alarm Test.

The "alarm test" notification is not meant to imply the **TEST-LED** command affects service (it does not). The notification is provided so there is a way to generate a sample autonomous message on demand.

During the test, the LED Test Button will have no effect.

During the LED test, the normal operation of the LEDs on the Shelf User Panel and on Shelf Circuit Packs (Units) shall be inhibited by the shelf controller.

This is to allow for all the LEDs to be on and off during the test.

The **TEST-LED** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-299 **TEST-LED** Input Parameters

Parameter Name	Description
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
aid	Access Identifier. This is the address of the equipment component ID. Identifies the bay, shelf where the LEDs are to be tested. The general format of the AID is: shelf AID. For the Network Communication Controller, the ***aid*** shall be omitted. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
repeat	Number of times the test should repeat. It has the value: **1**-**60**. If this parameter is omitted, it is equivalent to setting ***repeat*** to **1**.

OUTPUT FORMAT

If the network element fully complies with the **TEST-LED** command request, the following normal completion response is returned:

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

COMPLD will be returned when the test is finished. This may take quite a while depending on the value of ***repeat***.

OUTPUT PARAMETERS

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

The output does not indicate PASS/FAIL; it is up to the observer to determine whether or not the test passed.

EXAMPLE INPUT/OUTPUT

The following example shows a **TEST-LED** command that requests to test LEDs twice for all circuit packs that are in bay 1 shelf 1. This test takes approximately 24 seconds to return COMPLD:

```
TEST-LED:LT-WBM:1-1:123456::2;

   LT-WBM 98-01-01 08:00:00
M  123456 COMPLD
;
```

ERROR RESPONSES

Refer to the **RTRV-HDR** command in the **ERROR RESPONSES** section. The error responses listed there also pertain to the **TEST-LED** command.

RELATED TL1 MESSAGES

TEST-ALM

A Appendix

Overview

Purpose This section presents several tables of information regarding TL1 parameters, especially of the Access Identifiers (AID).

Access identifiers

Purpose of access identifiers

Access identifiers (AIDs) are used for addressing particular components within a WaveStar® TDM 10G (STM-64), R4.0 system, like a shelf, circuit pack, slot or port, for example. An AID is case insensitive, but AID values are usually given in lower case.

Hierarchically structured

AIDs are hierarchically structured. The following table provides an overview of the general AID structure by presenting some examples.

Table A-1 Examples of access identifiers

Entity	Format[1]	Example
Rack	bay[2]	1
Shelf	bay-shelf	1-1
Protection group	bay-shelf-protectiongroup	1-1-t01
Slot	bay-shelf-#-#-slot	1-1-#-#-01
Circuit pack	bay-shelf-#-#-slot-CP	1-1-#-#-01-cp
Port	bay-shelf-#-#-slot-port	1-1-#-#-01-1
Tributary	bay-shelf-#-#-slot-port-trib	1-1-#-#-01-1-1

Notes:

1. The “#” character serves as a placeholder if a particular AID field cannot be specified, instead of leaving the field empty (see “General AID structure” below).
2. “Bay” is a synonym for “rack”.

General AID structure

The general AID structure is based on the assumption that there exists a hierarchy associated with the system entities in the order of bay, shelf, protection group, line/side, slot, port/circuit pack and tributary. Therefore, the general structure consists of these entities separated by “–”:

bay-shelf-protection group-line/side-slot-port/circuit pack-tributary

Some entities such as the system itself fall out of this hierarchy and are handled separately.

An AID may not exceed 20 characters in length (including “-”).

Simple and compound AIDs

Access identifiers can be distinguished into simple and compound AIDs. For example, “system”, “extref1”, “line1” or “exttmg0_out” are simple AIDs. Compound AIDs follow the general AID structure given in the previous paragraph.

Please refer to *Overview of AIDs (A-3)* for an overview of WaveStar® TDM 10G (STM-64), R4.0 AIDs.

The "all" AID entry

Access identifiers allow for the specification of a range of entities by using the term **all**. The **all** AID entry may be used in the bay, shelf, slot, port, and tributary fields. It can neither be used in the protection group field nor in the side/line field.

Important! If **all** is used in the bay and/or shelf AID fields, it cannot be used in any other AID fields.

Overview of AIDs

The following table gives an overview of the access identifiers defined for WaveStar® TDM 10G (STM-64), R4.0. If there are several values possible for an entry they are given in curly braces ({ }).

Table A-2 System level external user AIDs

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) System	system	system
WaveStar® TDM 10G (STM-64) System Switch Group	esysswitchgrp	esysswitchgrp

Table A-3 Bay external user AIDs

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Bay with Main Shelf (1 High Speed and 1 Low Speed Shelf Combined with One Backplane)	1 all	1
WaveStar® TDM 10G (STM-64) I/O Bay	2 all	2

Table A-4 Shelf external user AIDs

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) All Shelves in all the Bays	all-all	This AID is TL1 command dependent. If the specific TL1 command supports this AID, all the shelves in all of the bays are addressed.
WaveStar® TDM 10G (STM-64) Main (Low Speed) Shelf	1-1	1-1
WaveStar® TDM 10G (STM-64) Main (High Speed) Shelf	1-2	1-2
WaveStar® TDM 10G (STM-64) Expansion Shelf	{1-2}-{1-3}	{1-2}-{1-3}
WaveStar® TDM 10G (STM-64) Any Shelf or All Shelves in a Specific Bay	{1-2}-{1-3,all}	{1-2}-{1-3}

Table A-5 Protection group external user AIDs

Entity	Input AID	Output AID
WS TDM 10G (STM-64) All protection groups on the specified shelf	{1-2}-{1-3}-all	This AID is TL1 command dependent. If the specific TL1 command supports this AID, a subset of the following output AIDs will be returned.
WaveStar® TDM 10G (STM-64) 2F BLSR Facility Protection Group	{1-2}-{1-3}-t{01-99, all}	{1-2}-{1-3}-t{01-99}
WaveStar® TDM 10G (STM-64) 1+1 Facility Protection Group	{1-2}-{1-3}-o{01-99, all}	{1-2}-{1-3}-o{01-99}
WS TDM 10G (STM-64) 1x1 MSP Protection Group	{1-2}-{1-3}-n{01-99,all}	{1-2}-{1-3}-n{01-99,all}
WaveStar® TDM 10G (STM-64) 1xN Equipment Protection Group (STM1EE4)	1-{1,3}-estm1ee4grp	1-{1,3}-estm1ee4grp
WaveStar® TDM 10G (STM-64) 1+1 Timing Equipment Protection Group	{1-2}-{1-3}-etmggrp	{1-2}-{1-3}-etmggrp
WaveStar® TDM 10G (STM-64) 1+1 DCC Equipment Protection Group (DCC and DCCEI)	{1-2}-{1-3}-edccgrp	{1-2}-{1-3}-edccgrp

These notes apply to the following table:
Note: {e,w} denotes the East side or West side.
Note: {w,p} denotes the Working side or the Protection side.

Table A-6 Side/line external user AIDs

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) 2F BLSR Facility Protection Group East/West Side	{1-2}-{1-3}-t{01-99}-{e,w}	{1-2}-{1-3}-t{01-99}-{e,w}
WaveStar® TDM 10G (STM-64) Optical 1+1 Protection Group Working/Protection Line	{1-2}-{1-3}-o{01-99}-{w,p}	{1-2}-{1-3}-o{01-99}-{w,p}
WS TDM 10G (STM-64) 1x1 MSP Protection Group Working/Protection Lines	{1-2}-{1-3}-n{01-99}-{1,p}	{1-2}-{1-3}-n{01-99}-{1,p}
WaveStar® TDM 10G (STM-64) 1xN Equipment Protection Group (STM1EE4) Working/Protection Lines	{1-2}-{1,3}-estm1ee4grp-{w,p}	{1-2}-{1,3}-estm1ee4grp-{w,p}}
WaveStar® TDM 10G (STM-64) 1+1 Protection Group Working/Protection Line	{1-2}-{1-3}-n{01-99}-{1,p}	{1-2}-{1-3}-n{01-99}-{1,p}
WaveStar® TDM 10G (STM-64) 1+1 Timing Equipment Protection Group Working/Protection Lines	{1-2}-{1,3}-etmggrp-{w,p}	{1-2}-{1,3}-etmggrp-{w,p}}
WaveStar® TDM 10G (STM-64) 1+1 DCC Equipment Protection Group (DCC and DCCEI) Working/Protection Lines	{1-2}-{1-3}-edccgrp-{w,p}	{1-2}-{1-3}-edccgrp-{w,p}

Table A-7 Slot external user aids for the WaveStar® TDM 10G (STM-64)

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Any Shelf All slots on the specified shelf	{1-2}-{1-3}-#-#-all	This AID is TL1 command dependent. If the specific TL1 command supports this AID, a subset of the following output AIDs will be returned.
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf port card slot	1-1-#-#-{01-16}	1-1-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf stm1ee4 slot	1-1-#-#-{01-16}	1-1-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf oc3/stm1 slot	1-1-#-#-{01-16}	1-1-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf oc12/stm4 slot	1-1-#-#-{01-16}	1-1-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf oc48/stm16 slot	1-1-#-#-{02, 04, 06, 08,...14, 16}	1-1-#-#-{02, 04, 06, 08,...14, 16}
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf Gigabit Ethernet slot	1-1-#-#-{02, 04, 06, 08,...14, 16}	1-1-#-#-{02, 04, 06, 08,...14, 16}
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf electrical protection pack slot	1-1-#-#-eprn	1-1-#-#-eprn
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf electrical protection switch pack slot	1-1-#-#-eprotsw	1-1-#-#-eprotsw
WaveStar® TDM 10G (STM-64) (576) switch0 slot	1-1-#-#-switch0	1-1-#-#-switch0
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf ctlmem0 slot (slot for subrack controller)	1-1-#-#-ctlmem0	1-1-#-#-ctlmem0
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf dccei slot	1-1-#-#-dccei	1-1-#-#-dccei

Table A-7 Slot external user aids for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf ctlmem1 slot (slot for subrack controller)	1-1-#-#-ctlmem1	1-1-#-#-ctlmem1
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf tmg0 slot	1-1-#-#-tmg0	1-1-#-#-tmg0
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf tmg1 slot	1-1-#-#-tmg1	1-1-#-#-tmg1
WaveStar® TDM 10G (STM-64) (576) switch1 slot	1-1-#-#-switch1	1-1-#-#-switch1
WaveStar® TDM 10G (STM-64) Main High Speed Shelf trw slot	1-2-#-#-trw	1-2-#-#-trw
WaveStar® TDM 10G (STM-64) Main High Speed Shelf tre slot	1-2-#-#-tre	1-2-#-#-tre
WaveStar® TDM 10G (STM-64) Main High Speed Shelf oaw slot	1-2-#-#-oaw	1-2-#-#-oaw
WaveStar® TDM 10G (STM-64) Main High Speed Shelf oae slot	1-2-#-#-oae	1-2-#-#-oae
WaveStar® TDM 10G (STM-64) Main High Speed Shelf pprocw slot	1-2-#-#-pprocw	1-2-#-#-pprocw
WaveStar® TDM 10G (STM-64) Main High Speed Shelf switch0 slot	1-2-#-#-switch0	1-2-#-#-switch0
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ppls0 slot	1-2-#-#-ppls0	1-2-#-#-ppls0
WaveStar® TDM 10G (STM-64) Main High Speed Shelf dccei slot	1-2-#-#-dccei	1-2-#-#-dccei
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ctlmem0 slot	1-2-#-#-ctlmem0	1-2-#-#-ctlmem0

Table A-7 Slot external user aids for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ctlmem1 slot	1-2-#-#-ctlmem1	1-2-#-#-ctlmem1
WaveStar® TDM 10G (STM-64) Main High Speed Shelf tmg0 slot	1-2-#-#-tmg0	1-2-#-#-tmg0
WaveStar® TDM 10G (STM-64) Main High Speed Shelf tmg1 slot	1-2-#-#-tmg1	1-2-#-#-tmg1
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ppls1 slot	1-2-#-#-ppls1	1-2-#-#-ppls1
WaveStar® TDM 10G (STM-64) Main High Speed Shelf switch1 slot	1-2-#-#-switch1	1-2-#-#-switch1
WaveStar® TDM 10G (STM-64) Main High Speed Shelf pproce slot	1-2-#-#-pproce	1-2-#-#-pproce
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf Port unit slot	{1-2}-{1-3}-#-#-{01-16}	{1-2}-{1-3}-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf stm1ee4 slot	{1-2}-{1-3}-#-#-{01-16}	{1-2}-{1-3}-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf oc3/stm1 slot	{1-2}-{1-3}-#-#-{01-16}	{1-2}-{1-3}}-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf oc12/stm4 slot	{1-2}-{1-3}-#-#-{01-16}	{1-2}-{1-3}-#-#-{01-16}
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf oc48/stm16 slot	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf Gigabit Ethernet slot	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf (576) switch0 slot	{1-2}-{1-3}-#-#-switch0	{1-2}-{1-3}-#-#-switch0

Table A-7 Slot external user aids for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf ctlmem0 slot (slot for subrack controller)	{1-2}-{1-3}-#-#-ctlmem0	{1-2}-{1-3}-#-#-ctlmem0
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf dccei slot	{1-2}-{1-3}}-#-#-dccei	{1-2}-{1-3}-#-#-dccei
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf ctlmem1 slot (slot for subrack controller)	{1-2}-{1-3}-#-#-ctlmem1	{1-2}-{1-3}-#-#-ctlmem1
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf tmg0 slot	{1-2}-{1-3}-#-#-tmg0	{1-2}-{1-3}-#-#-tmg0
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf tmg1 slot	{1-2}-{1-3}-#-#-tmg1	{1-2}-{1-3}-#-#-tmg1
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf (576) switch1 slot	{1-2}-{1-3}-#-#-switch1	{1-2}-{1-3}-#-#-switch1

Table A-8 Circuit pack external user AIDs for the WaveStar® TDM 10G (STM-64)

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Any Shelf All circuit packs on the specified shelf	{1-2}-{1-3}-#-#-all-cp	This AID is TL1 command dependent. If the specific TL1 command supports this AID, a subset of the following output AIDs will be returned.
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf port unit circuit pack	1-1-#-#-{01-16}-cp	1-1-#-#-{01-16}-cp
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf electrical protection pack unit	1-1-#-#-eprn-cp	1-1-#-#-eprn-cp
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf electrical protection switch pack unit	1-1-#-#-eprotsw-cp	1-1-#-#-eprotsw-cp

Table A-8 Circuit pack external user AIDs for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf (576) switch0 unit	1-1-#-#-switch0-cp	1-1-#-#-switch0-cp
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf ctlmem0 unit	1-1-#-#-ctlmem0-cp	1-1-#-#-ctlmem0-cp
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf dccei unit	1-1-#-#-dccei-cp	1-1-#-#-dccei-cp
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf ctlmem1 unit	1-1-#-#-ctlmem1-cp	1-1-#-#-ctlmem1-cp
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf tmg0 unit	1-1-#-#-tmg0-cp	1-1-#-#-tmg0-cp
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf tmg1 unit	1-1-#-#-tmg1	1-1-#-#-tmg1
WaveStar® TDM 10G (STM-64) Main Low Speed Shelf (576) switch1 unit	1-1-#-#-switch1	1-1-#-#-switch1
WaveStar® TDM 10G (STM-64) Main High Speed Shelf trw unit	1-2-#-#-trw-cp	1-2-#-#-trw-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf tre unit	1-2-#-#-tre-cp	1-2-#-#-tre-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf oaw unit	1-2-#-#-oaw-cp	1-2-#-#-oaw-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf oae unit	1-2-#-#-oae-cp	1-2-#-#-oae-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf pprocw unit	1-2-#-#-pprocw-cp	1-2-#-#-pprocw-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf switch0 unit	1-2-#-#-switch0-cp	1-2-#-#-switch0-cp

Table A-8 Circuit pack external user AIDs for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ppls0 unit	1-2-#-#-ppls0-cp	1-2-#-#-ppls0-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf dccei unit	1-2-#-#-dccei-cp	1-2-#-#-dccei-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ctlmem0 unit	1-2-#-#-ctlmem0-cp	1-2-#-#-ctlmem0-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ctlmem1 unit	1-2-#-#-ctlmem1-cp	1-2-#-#-ctlmem1-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf tmg0 unit	1-2-#-#-tmg0-cp	1-2-#-#-tmg0-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf tmg1 unit	1-2-#-#-tmg1-cp	1-2-#-#-tmg1-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf ppls1 unit	1-2-#-#-ppls1-cp	1-2-#-#-ppls1-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf switch1 unit	1-2-#-#-switch1-cp	1-2-#-#-switch1-cp
WaveStar® TDM 10G (STM-64) Main High Speed Shelf pproce unit	1-2-#-#-pproce-cp	1-2-#-#-pproce-cp
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf Circuit pack	{1-2}-{1-3}-#-#-{01-16}-cp	{1-2}-{1-3}-#-#-{01-16}-cp
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf (576) switch0 unit	{1-2}-{1-3}-#-#-switch0-cp	{1-2}-{1-3}-#-#-switch0-cp
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf ctlmem0 unit (slot for subrack controller)	{1-2}-{1-3}-#-#-ctlmem0-cp	{1-2}-{1-3}-#-#-ctlmem0-cp
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf dccei unit	{1-2}-{1-3}-#-#-dccei-cp	{1-2}-{1-3}-#-#-dccei-cp

Table A-8 Circuit pack external user AIDs for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf ctlmem1 unit	{1-2}-{1-3}-#-#-ctlmem1-cp	{1-2}-{1-3}-#-#-ctlmem1-cp
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf tmg0 unit	{1-2}-{1-3}-#-#-tmg0-cp	{1-2}-{1-3}-#-#-tmg0-cp
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf tmg1 unit	{1-2}-{1-3}-#-#-tmg1-cp	{1-2}-{1-3}-#-#-tmg1-cp
WaveStar® TDM 10G (STM-64) Expansion (LS) Shelf (576) switch1 unit	{1-2}-{1-3}-#-#-switch1-cp	{1-2}-{1-3}-#-#-switch1-cp

Table A-9 Port external user AIDs for the WaveStar® TDM 10G (STM-64)

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) All the ports on the shelf	{1-2}-{1-3}-#-#-all-all	This AID is TL1 command dependent. If the specific TL1 command supports this AID, a subset of the following output AIDs will be returned.
WaveStar® TDM 10G (STM-64) All the unprotected ports on the shelf	{1-2}-{1-3}-u-#-all-all	This AID is TL1 command dependent. If the specific TL1 command supports this AID, a subset of the following output AIDs will be returned.
WaveStar® TDM 10G (STM-64) All the protected and unprotected ports for the PM related TL1 commands ONLY.	{1-2}-{1-3,all}-{u,#}-#-all-all {1-2,all}-all-{u,#}-#-all-all	This AID is specific to the Performance Monitoring TL1 commands.
WaveStar® TDM 10G (STM-64) Generic STM1EE4 port	{1-2}-{1-3}-#-#-{01-16}-{1-4,all}	{1-2}-{1-3}-#-#-{01-16}-{1-4}
WaveStar® TDM 10G (STM-64) Generic STM1 port	{1-2}-{1-3}-#-#-{01-16}-{1-4,all}	{1-2}-{1-3}-#-#-{01-16}-{1-4}
WaveStar® TDM 10G (STM-64) Generic STM4 port	{1-2}-{1-3}-#-#-{01-16}-{1-2,all}	{1-2}-{1-3}-#-#-{01-16}-{1-2}
WaveStar® TDM 10G (STM-64) Generic STM16 port	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1}

Table A-9 Port external user AIDs for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Generic STM64 port	1-2-#-#-{tre,trw}-{1,all}	1-2-#-#-{tre,trw}-1
WaveStar® TDM 10G (STM-64) Generic Gigabit Ethernet 2 port Ethernet Port	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1-2,all}	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1-2} Note: #(s) will NOT be filled in
WaveStar® TDM 10G (STM-64) Generic Gigabit Ethernet 2 port VCG Group	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2,all}	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2} Note: #(s) will NOT be filled in
WaveStar® TDM 10G (STM-64) Protected & Unprotected STM1EE4 Port	{1-2}-{1-3}-u-#-{01-16}-{1-4, all} {1-2}-{1-3}-#-#-{01-16}-{1-4, all}	{1-2}-{1-3}-u-#-{01-16}-{1-4}
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM1 Port	{1-2}-{1-3}-u-#-{01-16}-{1-4, all} {1-2}-{1-3}-#-#-{01-16}-{1-4, all}	{1-2}-{1-3}-u-#-{01-16}-{1-4}
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM4 Port	{1-2}-{1-3}-u-#-{01-16}-{1-2, all} {1-2}-{1-3}-#-#-{01-16}-{1-2, all}	{1-2}-{1-3}}-u-#-{01-16}-{1-2}
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM16 Port	{1-2}-{1-3}-u-#-{02,04,...14,16}-{1, all} {1-2}-{1-3}}-#-#-{02,04,...14,16}-{1, all}	{1-2}-{1-3}-u-#-{02,04,...14,16}-1
WaveStar® TDM 10G (STM-64) 1+1 Port (STM1, STM4 or STM16) (Port in a 1+1 facility protection group)	{1-2}-{1-3}}-o{01-99}-{w,p}-{01-16}-{1-4,all} {1-2}-{1-3}-o{01-99}-{w,p}-#-# {1-2}-{1-3}-#-#-{01-16}-{1-4,all} Note: “w” stands for WORKING, or“p” stands for PROTECTION	{1-2}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-4}
WaveStar® TDM 10G (STM-64) 1xN Port (STM1, STM4 or STM16) (Port in a 1xN facility protection group, with N max = 14) FUTURE	{1-2}-{1-3}-n{01-99}-{1-14,p}-{01-16}-{1-4,all} {1-2}-{1-3}-n{01-99}-{1-14,p}-#-# {1-2}-{1-3}-#-#-{01-16}-{1-4,all} Note: The “n” in “1-n” is the number of lines in the 1xN protection group. When a port is added to a protection group, it is assigned a line number. “p’ stands for protection.	{1-2}-{1-3}-n{01-99}-{1-14,p}-{01-16}-{1-4}

Table A-9 Port external user AIDs for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) 1x1 Port (STM64) (Port in a 1x1 MSP protection group)	{1-2}-{1-3}-n{01-99}-{1,p}-1-1 {1-2}-{1-3}-n{01-99}-{1,p}-#-# {1-2}-{1-3}-#-#-1-1 Note: The “n” in “1-n” is the number of lines in the 1x1 protection group. When a port is added to a protection group, it is assigned a line number. “p” stands for protection.	{1-2}-{1-3}-n{01-99}-{1,p}-1-1
WaveStar® TDM 10G (STM-64) STM16 2 fiber BLSR port (Port in a 2 fiber BLSR facility protection group)	{1-2}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1,all} {1-2}-{1-3}-t{01-99}-{e,w}-#-# {1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all} Note: {e,w} stands for East or West.	{1-2}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-1
WaveStar® TDM 10G (STM-64) STM16 4 fiber BLSR port (Port in a 4 fiber BLSR facility protection group) FUTURE	{1-2}-{1-3}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1,all} {1-2}-{1-3}-f{01-99}-{e,w}{w,p}-#-# {1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all} Note: {e,w} stands for East or West and {w,p} stands for Working or Protection.	{1-2}-{1-3}-f{01-99}-{e,w}{w,p}-{02, 04, 06,08,...14, 16}-1
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM64 Port	1-2-u-#-{tre,trw}-{1,all} 1-2-#-#-{tre,trw}-{1,all}	1-2-u-#-{tre,trw}-{1}
WaveStar® TDM 10G (STM-64) 1+1 Port STM64 (Port in a 1+1 facility protection group)	1-2-o{01-99}-{w,p}-{tre,trw}-{1,all} 1-2-o{01-99}-{w,p}-#-# 1-2-#-#-{tre,trw}-{1,all} Note: “w” stands for WORKING, or“p” stands for PROTECTION	1-2-o{01-99}-{w,p}-{tre,trw}-1
WaveStar® TDM 10G (STM-64) STM64 2 fiber BLSR port (Port in a 2 fiber BLSR facility protection group)	1-2-t{01-99}-{e,w}-{tre,trw}-{1,all} 1-2-t{01-99}-{e,w}-#-# 1-2-#-#-{tre,trw}-{1,all} Note: {e,w} stands for East or West.	1-2-t{01-99}-{e,w}-{tre,trw}-1

Table A-10 Tributary external user AIDs for the WaveStar® TDM 10G (STM-64)

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) All the tribs on all the ports on all the slots	{1-2}-{1-3}-#-#-all-all-all	This AID is TL1 command dependent. If the specific TL1 command supports this AID, a subset of the following output AIDs will be returned.
WaveStar® TDM 10G (STM-64) All the tribs on all the unprotected ports on all the slots	{1-2}-{1-3}-u-#-all-all-all	This AID is TL1 command dependent. If the specific TL1 command supports this AID, a subset of the following output AIDs will be returned.
WaveStar® TDM 10G (STM-64) All the protected and unprotected tributaries for the PM related TL1 commands ONLY.	{1-2}-{1-3,all}-{u,#}-#-all-all-all {1-2,all}-all-{u,#}-#-all-all-all	This AID is specific to the Performance Monitoring TL1 commands.
WaveStar® TDM 10G (STM-64) Generic STM1EE4 Tributary	{1-2}-{1-3}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-2}-{1-3}u-#-{01-16}-{1-4}-{1-3}
WaveStar® TDM 10G (STM-64) Generic OC3/STM1 Tributary	{1-2}-{1-3}-#-#-{01-16}-{1-8,all}-{1-3,all}	{1-2}-{1-3}-#-#-{01-16}-{1-8}-{1-3}
WaveStar® TDM 10G (STM-64) Generic OC12/STM4 Tributary	{1-2}-{1-3}-#-#-{01-16}-{1-2,all}-{1-12,all}	{1-2}-{1-3}-#-#-{01-16}-{1-2}-{1-12}
WaveStar® TDM 10G (STM-64) Generic OC48/STM16 Tributary	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-1-{1-48}
WaveStar® TDM 10G (STM-64) 10G Shelf Generic OC192/STM64 Tributary	1-2-#-#-{tre,trw}-{1,all}-{1-192,all}	1-2-#-#-{tre,trw}-1-{1-192}
WaveStar® TDM 10G (STM-64) Generic Gigabit Ethernet 2 port VCG Tributary	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2,all}-{1-24,all}	{1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2}-{1-24} Note: #(s) will NOT be filled in
WaveStar® TDM 10G (STM-64) Protected & Unprotected STM1EE4 Tributary	{1-2}-{1-3}-u-#-{01-16}-{1-4,all}-{1-3,all} {1-2}-{1-3}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-2}-{1-3}-u-#-{01-16}-{1-4}-{1-4}
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM1Tributary	{1-2}-{1-3}-u-#-{01-16}-{1-8,all}-{1-3,all} {1-2}-{1-3}-#-#-{01-16}-{1-8,all}-{1-3,all}	{1-2}-{1-3}-u-#-{01-16}-{1-8}-{1-3}

Table A-10 Tributary external user AIDs for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM4 Tributary	{1-2}-{1-3}-u-#-{01-16}-{1-2,all}-{1-12,all} {1-2}-{1-3}-#-#-{01-16}-{1-2,all}-{1-12,all}	{1-2}-{1-3}u-#-{01-16}-{1-2}-{1-12}
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM16 Tributary	1{1-2}-{1-3}-u-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-2}-{1-3}-u-#-{02, 04, 06, 08,...14, 16}-1-{1-48}
WaveStar® TDM 10G (STM-64) 1+1 optical tributary (STM1, STM4 & STM16)	{1-2}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8,all}-{1-48,all} {1-2}-{1-3}-o{01-99}-{w,p}-#-#-{1-48,all} {1-2}-{1-3}-#-#-{01-16}-{1-8,all}-{1-48,all} Note: {w,p} stands for Working or Protection.	{1-2}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8}-{1-48}
WS TDM 10G (STM-64) 1x1 tributary STM64 (Trib in a 1x1 facility protection group)	1-2-n{01-99}-{1,p}-{tre,trw}-{1,all}-{1-192,all} 1-2-n{01-99}-{1,p}-#-#-{1-192,all} 1-2-#-#-{tre,trw}-{1,all}-{1-192,all}	1-2-n{01-99}-{1,p}-{tre,trw}-{1}-{1-192}
WaveStar® TDM 10G (STM-64) 1xN optical tributary (with N max = 14) (STM1, STM4 & STM16)	{1-2}-{1-3}-n{01-99}-{1-14, p}-{01-16}-{1-8,all}-{1-48,all}-1 {1-2}-{1-3}-n{01-99}-{1-14, p}-#-#-{1-48,all} {1-2}-{1-3}-#-#-{01-16}-{1-8,all}-{1-48,all} Note: The “n” in “1-n” the number of lines in the 1xN protection group. When a port is added to a protection group, it is assigned a line number.	{1-2}-{1-3}-n{01-99}-{1-14, p}-{01-16}-{1-8}-{1-48}
WaveStar® TDM 10G (STM-64) OC48/STM16 2F BLSR Tributary	{1-2}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-2}-{1-3}-t{01-99}-{e,w}-#-#-{1-48,all} {1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} Note: {e,w} stands for East or West.	{1-2}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1}-{1-48}

Table A-10 Tributary external user AIDs for the WaveStar® TDM 10G (STM-64) *(continued)*

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) OC48/STM16 4F BLSR Tributary FUTURE	{1-2}-{1-3}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-2}-{1-3}-f{01-99}-{e,w}{w,p}-#-#-{1-48,all} {1-2}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} Note: {e, w} stands for East or West. {w, p} stands for Working or Protection.	{1-2}-{1-3}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1}-{1-48}
WaveStar® TDM 10G (STM-64) Unprotected (0x1) STM64 Tributary	1-2-u-#-{tre,trw}-{1,all}-{1-192,all} 1-2-#-#-{tre,trw}-{1,all}-{1-192,all}	1-2-u-#-{tre,trw}-{1}-{1-192}
WaveStar® TDM 10G (STM-64) 1+1 Tributary STM64 (Trib in a 1+1 facility protection group)	1-2-o{01-99}-{w,p}-{tre,trw}-{1,all}-{1-192,all} 1-2-o{01-99}-{w,p}-#-#-{1-192,all} 1-2-#-#-{tre,trw}-{1,all}-{1-192,all} Note: “w” stands for WORKING, or“p” stands for PROTECTION	1-2-o{01-99}-{w,p}-{tre,trw}-{1}-{1-192}
WaveStar® TDM 10G (STM-64) 10G Shelf OC192/STM64 2F BLSR Tributary	1-2-t{01-99}-{e,w}-{tre,trw}-{1,all}-{1-192,all} 1-2-t{01-99}-{e,w}-#-#-{1-192,all} 1-2-#-#-{tre,trw}-{1,all}-{1-192,all} Note: {e,w} stands for East or West.	1-2-t{01-99}-{e,w}-{tre,trw}-{1}-{1-192}

Table A-11 External user AIDs on Timeslots for NUT (non preemptible protection access)

Entity	Input AID	Output AID
WS TDM 10G (STM-64) Timeslot of the protectiongroup where NUT is enabled.	N.A. (remark: this AID is only used for alarming the timeslot from a protection group that has the NUT enabled)	{1-2}-{1-3}-t{01-99}-#-#-#-{1-96}

Table A-12 External user AIDs for fans

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) Main LS Shelf Fan	NA	1-1-fan1
WaveStar® TDM 10G (STM-64) Main HS Shelf Fan	NA	1-2-fan1
WaveStar® TDM 10G (STM-64) Expansion Shelf Fan	NA	{1-2}-{1-3}-fan1

Table A-13 External user AIDs for miscellaneous discrete alarm points

Entity	Input AID	Output AID
WS TDM 10G (STM-64) Miscellaneous Discrete Alarm Points: Input	misc_in{1-8} misc_inall	misc_in{1-8}
WS TDM 10G (STM-64) Miscellaneous Discrete Alarm Points: Output	misc_out{1-8} misc_outall	misc_out{1-8}

Table A-14 External user AIDs for external timing reference

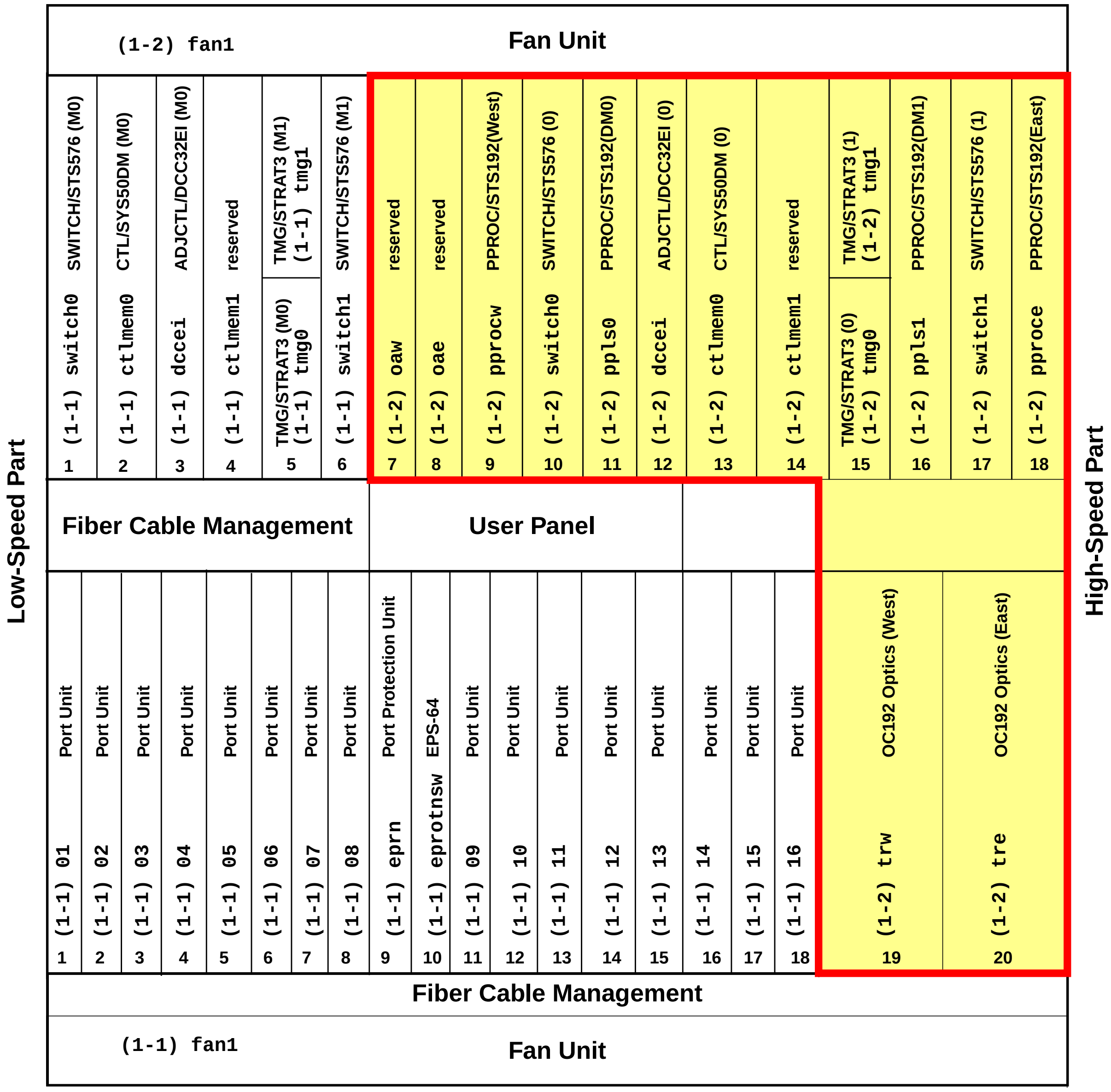
Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) External Timing reference 1	extref1	extref1
WaveStar® TDM 10G (STM-64) External Timing reference 2	extref2	extref2
WaveStar® TDM 10G (STM-64) External Line Timing reference 1	line1	line1
WaveStar® TDM 10G (STM-64) External Line Timing reference 2	line2	line2
WaveStar® TDM 10G (STM-64) External Line Timing reference 3	line3	line3
WaveStar® TDM 10G (STM-64) External Line Timing reference 4	line4	line4
WaveStar® TDM 10G (STM-64) External Line Timing reference 5	line5	line5
WaveStar® TDM 10G (STM-64) External Line Timing reference 6	line6	line6

Table A-15 External user AIDs for timing ports

Entity	Input AID	Output AID
WaveStar® TDM 10G (STM-64) External Timing Input Port 0	exttmg0	exttmg0
WaveStar® TDM 10G (STM-64) External Timing Input Port 1	exttmg1	exttmg1
WaveStar® TDM 10G (STM-64) External Timing Output Port 0	exttmg0_out	exttmg0_out
WaveStar® TDM 10G (STM-64) External Timing Output Port 1	exttmg1_out	exttmg1_out

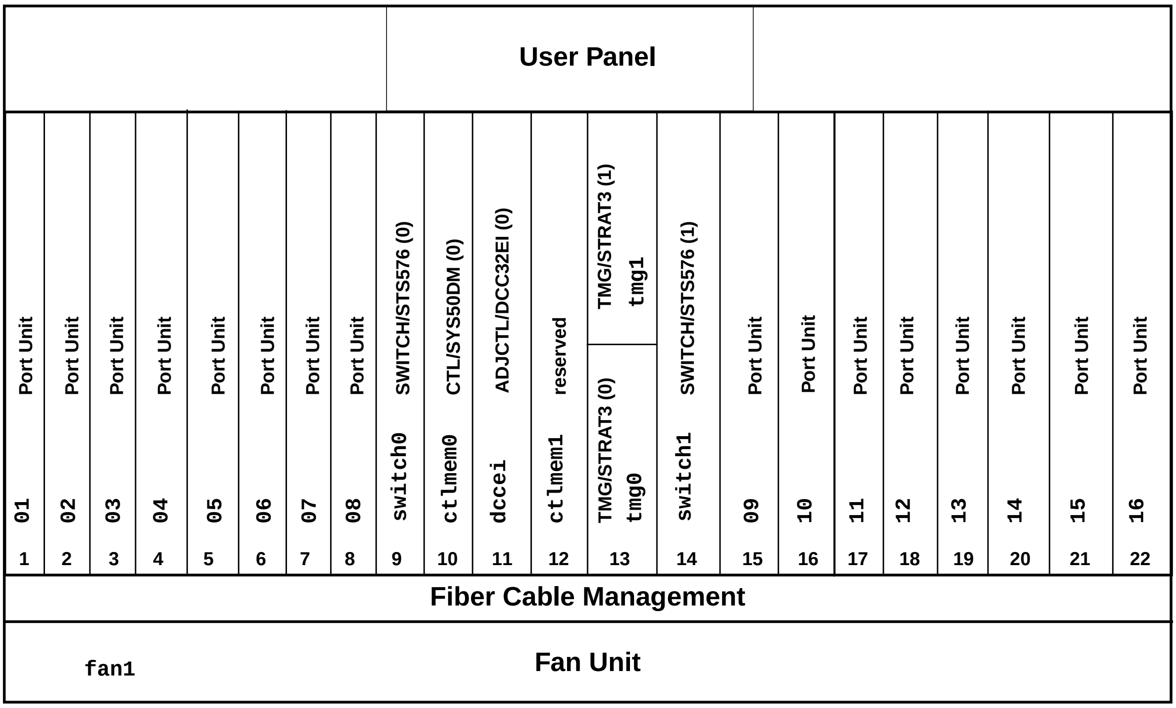
Slot assignment (main shelf)

The following figure shows the slot assignment for a WaveStar® TDM 10G (STM-64), R4.0 main shelf as well as the corresponding AIDs.



Slot assignment (extension shelf)

The following figure shows the slot assignment for a WaveStar® TDM 10G (STM-64), R4.0 extension shelf as well as the corresponding AIDs.



PM parameter tables

Overview The following tables list the WaveStar® TDM 10G (STM64) PM parameters.

Table A-16 SDH PM parameters summary

Level	Parameter	Interface type				
		STM-1e	STM-1o	STM-4	STM-16	STM-64
PHYSICAL	LBC	-	-	-	x	x
	LBC_b	-	-	-	-	x
	OPT	-	-	-	x	x
	OPT_b	-	-	-	-	x
	OPR	-	-	-	x	x
	OPR_b	-	-	-	-	x
	OPR_a	-	-	-	-	x
RS	RS_N_ES	x	x	x	x	x
	RS_N_SES	x	x	x	x	x
	RS_N_BBE	x	x	x	x	x
	RS_N_UAS	x	x	x	x	x
MS	MS_N_ES	x	x	x	x	x
	MS_F_ES	x	x	x	x	x
	MS_N_SES	x	x	x	x	x
	MS_F_SES	x	x	x	x	x
	MS_N_BBE	x	x	x	x	x
	MS_F_BBE	x	x	x	x	x
	MS_N_UAS	x	x	x	x	x
	MS_F_UAS	x	x	x	x	x
	MS_N_FECC	-	-	-	-	x
	MS_N_FECU	-	-	-	-	x

Table A-16 SDH PM parameters summary *(continued)*

Level	Parameter	Interface type				
		STM-1e	STM-1o	STM-4	STM-16	STM-64
HOVC Path	VC_N_ES	x	x	x	x	x
	VC_F_ES	x	x	x	x	x
	VC_N_SES	x	x	x	x	x
	VC_F_SES	x	x	x	x	x
	VC_N_BBE	x	x	x	x	x
	VC_F_BBE	x	x	x	x	x
	VC_N_UAS	x	x	x	x	x
	VC_F_UAS	x	x	x	x	x

Table A-17 HOVC path PM minimum register size

SDH layer	PM parameter	Rate (e.g. VC-N)	Minimum size for accumulation registers		Minimum size for threshold registers	
			15 minute	1 day	15 min	1 day
HOVC Path	VC_N_ES VC_F_ES	VC-3 VC-4 VC-4-4c VC-4-16c	900	86400	900	86400
	VC_N_SES VC_F_SES	VC-3 VC-4 VC-4-4c VC-4-16c	810	77760	810	77760
	VC_N_BBE VC_F_BBE	VC-3 VC-4	65535 &	8388607 &&	65535 &	8388607 &&
		VC-4-4c VC-4-16c	16777215 *	2147483647**	16777215 *	2147483647**
	VC_N_UAS VC_F_UAS	VC-3 VC-4 VC-4-4c VC-4-16c	900	86400	900	86400

Table A-18 SDH RS/MS minimum register size

SDH layer	PM parameter	Rate (e.g. STM-N) N=1e, 1o, 4, 16, 64	Minimum size for accumulation registers		Minimum size for threshold registers
			15 minute	1 day	15 min
RS	RS_N_ES	All	900	86400	900
	RS_N_SES	All	810	77760	900
	RS_N_BBE	All	16777215 *	2147483647 **	16777215 *
	RS_N_UAS	All	900	86400	900
MS	MS_N_ES MS_F_ES	All	900	86400	900
	MS_N_SES MS_F_SES	All	810	77760	810

Table A-19 Performance monitoring parameters and ranges associated to data interfaces

Performance parameters	Performance monitoring point			
	LAN port (Ethernet segment) 15 min.	WAN port (VC-4/ STS-1 group) 15 min	LAN port (Ethernet segment) 24 hr.	WAN port (VC-4/ STS-1 group) 24 hr
Bytes Received (EINB)	0 - 112500 Mbytes	0 - 112500 Mbytes	0 - 10800 Gbytes	0 - 10800 Gbytes
Bytes Sent (EONB)	0 - 112500 Mbytes	0 - 112500 Mbytes	0 - 10800 Gbytes	0 - 10800 Gbytes
Incoming Errored Frames Dropped (EDFE)	0 - 3516 Mframes	0 - 3516 Mframes	0 - 338 Gframes	0 - 338 Gframes

Table A-20 Default PM thresholds associated to data interfaces

Performance parameter	**Performance monitoring point**			
	LAN port (Ethernet segment) 15 min.	**WAN port (VC-4/ STS-1 group) 15 min.**	**LAN port (Ethernet Segment) 24 hrs.**	**WAN port (VC-4/ STS-1 group) 24 hrs.**
Incoming Errored Packets Dropped (EDFE)	1875000 frames	10 frames	18 Mframes	50 frames

□

Alarms/event tables with condition description parameters

Introduction

"TL1 Alarm/Event Tables" describes all the alarms and events except for protection switching events which are described in "Protection Switch Notification Tables".

TL1 alarm/event tables

The following tables list parameters associated with the alarm and event TL1 commands (**`RTRV-ALM`**, **`RTRV-COND, RTRV-FLT-STATE`**, **`REPT ALM`**, **`REPT COND`**, **`REPT EVT`**). The alarm and event tables list the values for the *modifier, condtype*, and *conddescr* parameter that can be returned by these commands. Some of the commands also have a parameter called *aidtype* which can have the same set of values as *modifier.*

The tables are organized by Alarm Severity Assignment Profile (ASAP) profile types. A column in each table lists the **`ED-ASAP-PROF`** command ASAP input parameters. This TL1 command can be used to modify the severity associated with a parameter and that severity determines whether or not the parameter represents an alarm or event.

The following material explains some of the terminology that is used in the alarm/event tables.

Alarm level

Some of the ASAP parameters have Service Affecting (SA) and Non Service Affecting (NSA) values. For this case there are columns labelled **SA ALM Lvl** and **NSA ALM Lvl**. If there is no differentiation between SA and NSA conditions, then the column is instead labelled **ALM Lvl**. The column entry(s) presents the default alarm levels (codes) for the different alarm conditions. Alarm levels include: CR (Critical), MJ (Major), MN (Minor), NA (Not-Alarmed), NR (Not-Reported).

Type of AID and alarmed entity

The *Type of AID* and the *alarmed entity* go hand-in-hand: they describe the entity that may be alarmed. For example, the *Type of AID* might be "logical tributary" and the *alarmed entity* might be "{rr} CS" where {rr} may represent the set of values STM1 STM4, STM16, STM64. CS designates a Constituent Signal within the associated port.

Table A-21 APS ASAP

Alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: protection group Alarm Duration: persistent			
modifier / aidtype: STM1, STM4, STM16, STM64			
MJ	fop	APSFOP	Communications, **1+1 opt prot grp**, APS Failure of Protocol Communications, **1+1 opt prot grp**, APS Failure of Protocol-cleared

Table A-22 BLSR ASAP profile

Alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: protection group side Alarm Duration: persistent modifier / aidtype / rr: STM16, STM64			
MJ	blsrinaps	APSC	Communications, **BLSR prot grp**, BLSR Inconsistent APS Codes Communications, **BLSR prot grp**, BLSR Inconsistent APS Codes-cleared
MJ	blsrimaps	APSPROV (aps provision)	Communications, **BLSR prot grp**, BLSR Improper APS Codes Communications, **BLSR prot grp**, BLSR Improper APS Codes-cleared
MJ	blsrdkb	BLSR-DKB	Communications, **BLSR prot grp**, BLSR Default K-bytes Communications, **BLSR prot grp**, BLSR Default K-bytes-cleared
MJ	nidm	NID-CONFL (NID conflict)	Communications, **BLSR prot grp**, Node ID Mismatch Communications, **BLSR prot grp**, Node ID Mismatch-cleared
MJ	blsrts	RNG-SQUELCH	Communications, **{rr} port**, BLSR Traffic Squelched Communications, **{rr} port**, BLSR Traffic Squelched-cleared
NA	etp	RNG-PREEMPT	Communications, **BLSR prot grp**, Extra Traffic Preempted Communications, **BLSR prot grp**, Extra Traffic Preempted-cleared

Table A-22 BLSR ASAP profile *(continued)*

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: protection group Alarm Duration: persistent modifier / aidtype: STM16, STM64			
MN	rsmi	SQMAP-INCST	Communications, **BLSR prot grp**, Local Squelch Map Inconsistent Communications, **BLSR prot grp**, Local Squelch Map Inconsistent-cleared
MN	rsmc	SQMAP-CONFL	Communications, **BLSR prot grp**, Local Squelch Map Conflict Communications, **BLSR prot grp**, Local Squelch Map Conflict-cleared
MJ	rinc	RNG-INC	Communications, **BLSR prot grp**, Ring Incomplete Communications, **BLSR prot grp**, Ring Incomplete-cleared
MJ	ropn	RNG-OPEN	Communications, **BLSR prot grp**, Ring Open Communications, **BLSR prot grp**, Ring Open-cleared
MJ	dprn	DUPL-RNG	Communications, **BLSR prot grp**, Duplicate Ring Node Communications, **BLSR prot grp**, Duplicate Ring Node-cleared
NA	urt	RNG-URT	Communications, **BLSR prot grp**, Unknown Ring Type Communications, **BLSR prot grp**, Unknown Ring Type-cleared
MJ	irpm	RNG-IRPM	Communications, **BLSR prot grp**, Inconsistent Ring Prot Mode Communications, **BLSR prot grp**, Inconsistent Ring Prot Mode-cleared
MJ	cable	RNG-CERR	Communications, **BLSR prot grp**, E/W Cable Error Communications, **BLSR prot grp**, E/W Cable Error-cleared
NA	rdip	RNG-DSCVY	Communications, **BLSR prot grp**, Ring Discovery in Progress Communications, **BLSR prot grp**, Ring Discovery in Progress-cleared
MJ	rsip	RNG-INITC	Communications, **BLSR prot grp**, Ring Startup in Progress Communications, **BLSR prot grp**, Ring Startup in Progress-cleared
MJ	rpss	OVRDSW (override sw)	Communications, **BLSR prot grp**, Ring Prot Switching Suspended Communications, **BLSR prot grp**, Ring Prot Switching Suspended-cleared

Table A-22 BLSR ASAP profile *(continued)*

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
NA	nut_nopr	NUTNOPR	Communications, **{rr} CS**, Local NUT Not Operational Communications, **{rr} CS**, Local NUT Not Operational-cleared
NA	nut_inxcgrn	NUTINXCGRN	Communications, **{rr} CS**, NUT Inconsistent XC Granularity Communications, **{rr} CS**, NUT Inconsistent XC Granularity-cleared
NA	nut_dsbld	NUTDSBLD	Communications, **{rr} CS**, NUT Disabled Communications, **{rr} CS**, NUT Disabled-cleared
NA	nut_tmpprv	NUTTMPPRV	Communications, **{rr} CS**, Temporary NUT Provisioned Communications, **{rr} CS**, Temporary NUT Provisioned-cleared

Table A-23 DRIPATH ASAP profile

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: protection group Alarm Duration: persistent modifier / aidtype: VC3, VC4, VC44C, VC416C			
MN	psact	PSA	Communications, **Path prot grp**, Path Switch Active Communications, **Path prot grp**, Path Switch Active-cleared
NA	psfail	FAILTOSW	Communications, **Path prot grp**, Path Switch Failure Communications, **Path prot grp**, Path Switch Failure-cleared
NA	psinh	PSI	Communications, **Path prot grp**, Path Switch Inhibited Communications, **Path prot grp**, Path Switch Inhibited-cleared

Table A-24 ENET ASAP profile

SA alarm level	**NSA alarm level**	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: Ethernet port AID Alarm Duration: persistent modifier / aidtype: 1GE				
CR	NR	sa_lanlos nsa_lanlos	LOS	Communications, **Enet port**, Loss of Signal Communications, **Enet port**, Loss of Signal-cleared
MJ	NR	sa_lananm nsa_lananm	ANM	Communications, **Enet port**, Auto Negotiation Mismatch Communications, **Enet port**, Auto Negotiation Mismatch-cleared
Properties of the following alarms/events Type of AID: VCG AID Alarm Duration: persistent modifier / aidtype: VCG				
CR	NR	sa_loa nsa_loa	LOA	Communications, **VCG**, Loss of Alignment Communications, **VCG**, Loss of Alignment-cleared
CR	NR	sa_gfplof nsa_gfplof	GFPLOF	Communications, **VCG**, Loss of Frame Delineation Communications, **VCG**, Loss of Frame Delineation-cleared
NR	NR	sa_vcgsf nsa_vcgsf	VCGSF	Communications, **VCG**, VCG Signal Fail Communications, **VCG**, VCG Signal Fail-cleared
CR	NR	sa_clopc nsa_clopc	CLOPC	Communications, **VCG**, Loss of Partial Capacity Communications, **VCG**, Loss of Partial Capacity -cleared
CR	NR	sa_clotc nsa_clotc	CLOTC	Communications, **VCG**, Loss of Total Capacity Communications, **VCG**, Loss of Total Capacity -cleared
CR	NR	sa_cfopr nsa_cfopr	CFOPR	Communications, **VCG**, Failure of Protocol Rx Communications, **VCG**, Failure of Protocol Rx -cleared
CR	NR	sa_cfopt nsa_cfopt	CFOPT	Communications, **VCG**, Failure of Protocol Tx Communications, **VCG**, Failure of Protocol Tx -cleared

Table A-25 ENV ASAP profile

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The Alarm Issue Point (entity is **bolded**)
Properties of the following alarms/events Type of AID: Misc. discrete input Alarm Duration: persistent modifier / aidtype: COM, ENV			
NR	misc_inn (n=1-16)	MISC	Environmental, **Misc Discrete**, , {almmsg} Environmental, **Misc Discrete**, , {almmsg}-cleared

Table A-26 EQPT ASAP profile

SA alarm level	**NSA alarm level**	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: circuit pack Alarm Duration: persistent modifier / aidtype: EQPT				
CR	MN	sa_cpfail nsa_cpfail sa_cpuneq nsa_cpuneq	EQPT REPLUNITMISS (replaceable unit missing)	Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, Internal failure Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, Internal failure-cleared
				Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, Interface failure Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, Interface failure-cleared
				Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, Initialization failure Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, Initialization failure-cleared
				Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, PCMCIA NVM failure Equipment, **{cpname}/{cpqual}**, Circuit Pack Failure, PCMCIA NVM failure-cleared
				Equipment, **{cpname}/{cpqual}**, Circuit Pack Unequipped/Missing Equipment, **{cpname}/{cpqual}**, Circuit Pack Unequipped/Missing-cleared

Table A-26 EQPT ASAP profile *(continued)*

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
-	MN	sa_dccpr nsa_dccpr	DCCPR	Equipment, **{cpname}/{cpqual}**, DCC Partition Repair Equipment, **{cpname}/{cpqual}**, DCC Partition Repair-cleared
-	MN	sa_dccto nsa_dccto	DCCTO	Equipment, **{cpname}/{cpqual}**, DCC Tunnel Overflow Equipment, **{cpname}/{cpqual}**, DCC Tunnel Overflow-cleared
-	MN	sa_mcpuneq nsa_mcpuneq	REPLUNITMISS	Equipment, **{cpname}/{cpqual}**, Mate Circuit Pack Unequipped Equipment, **{cpname}/{cpqual}**, Mate Circuit Pack Unequipped-cleared
-	MN	sa_nvmw nsa_nvmw	BKUPMEMP (primary bkup memory failure)	Equipment, **{cpname}/{cpqual}**, Non-Volatile Memory Wearout Equipment, **{cpname}/{cpqual}**, Non-Volatile Memory Wearout-cleared
CR	MN	sa_als nsa_als	ALS	Equipment, **{cpname}/{cpqual}**, Automatic Laser Shutdown Equipment, **{cpname}/{cpqual}**, Automatic Laser Shutdown-cleared
Properties of the following alarms/events Type of AID: slot Alarm Duration: persistent modifier / aidtype: EQPT				
-	MN	sa_cpinv nsa_cpinv	PRCDRERR (procedure error)	Equipment, **Slot**, Circuit Pack Invalid, Unexpected Equipment, **Slot**, Circuit Pack Invalid, Unexpected-cleared
				Equipment, **Slot**, Circuit Pack Invalid, Illegal Equipment, **Slot**, Circuit Pack Invalid, Illegal-cleared
				Equipment, **Slot**, Circuit Pack Invalid, Unknown Equipment, **Slot**, Circuit Pack Invalid, Unknown-cleared
Properties of the following alarms/events Type of AID: shelf Alarm Duration: persistent modifier / aidtype: EQPT				
CR	MN	sa_fan nsa_fan	INT (interrupt)	Equipment, **Shelf**, Fan Failure Equipment, **Shelf**, Fan Failure-cleared

Table A-26 EQPT ASAP profile *(continued)*

SA alarm level	**NSA alarm level**	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
CR	MN	sa_fuse nsa_fuse	PWR	Equipment, **Shelf**, Power/Fuse Failure, Feeder A Equipment, **Shelf**, Power/Fuse Failure, Feeder A-cleared
				Equipment, **Shelf**, Power/Fuse Failure, Feeder B Equipment, **Shelf**, Power/Fuse Failure, Feeder B-cleared
Properties of the following alarms/events Type of AID: system Alarm Duration: persistent modifier / aidtype: EQPT				
MJ	MN	sa_mmis nsa_mmis	DATAFLT	Processing error, **{cpname}/{cpqual}**, Memory Mismatch Processing error, **{cpname}/{cpqual}**, Memory Mismatch-cleared
MJ	MN	sa_nvmusg nsa_nvmusg	BKUPMEMO	Processing error, **Sys Ctlr Ck Pk**, Non-Volatile Memory Usage Processing error, **Sys Ctlr Ck Pk**, Non-Volatile Memory Usage-cleared

Table A-27 PT ASAP profile

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The Alarm Issue Point (entity is **bolded**)
Properties of the following alarms/events Type of AID: Logical tributary AID Alarm Duration: persistent modifier / aidtype: STS1, STS3C			
CR	lop	LOP-P	Communications, **{rr} CS**, Loss of Pointer Communications, **{rr} CS**, Loss of Pointer-cleared
CR	ais	AIS-P	Communications, **{rr} CS**, Alarm Indication Signal - Path Communications, **{rr} CS**, Alarm Indication Signal - Path-cleared
NR	ber	T-BERP	Communications, **{rr} CS**, Bit Error/Signal Degrade - Path Communications, **{rr} CS**, Bit Error/Signal Degrade - Path-cleared
CR	uneq	UNEQ-P	Communications, **{rr} CS**, STS Path Unequip Communications, **{rr} CS**, STS Path Unequip-cleared

Table A-27 PT ASAP profile *(continued)*

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The Alarm Issue Point (entity is **bolded**)
NR	rfi	RFI-P	Communications, **STS1 CS**, Remote Failure Indication - Path Communications, **STS1 CS**, Remote Failure Indication - Path-cleared
CR	plm	PLM-P	Communications, **{rr} CS**, STS Payload Label Mismatch Communications, **{rr} CS**, STS Payload Label Mismatch-cleared
Properties of the following alarms/events Type of AID: vcg trib AID Alarm Duration: persistent modifier / aidtype: STS1, STS3C			
CR	lom	LOM	Communications, **{rr} CS**, Loss of Multiframe Communications, **{rr} CS**, Loss of Multiframe-cleared
CR	sqm	SQM	Communications, **{rr} CS**, Sequence Number Mismatch Communications, **{rr} CS**, Sequence Number Mismatch-cleared

Table A-28 PT ASAP profile

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The Alarm Issue Point (entity is **bolded**)
Properties of the following alarms/events Type of AID: Logical tributary AID Alarm Duration: persistent modifier / aidtype: VC3, VC4			
CR	hpf_lop	HPLOP	Communications, **{rr} CS**, HP Loss of Pointer Communications, **{rr} CS**, HP Loss of Pointer-cleared
CR	hpf_ssf	HPSSF (was SSF)	Communications, **{rr} CS**, HP Server Signal Failure Communications, **{rr} CS**, HP Server Signal Failure-cleared
CR	hpf_plm	HPPLM (was PLM-P)	Communications, **{rr} CS**, HP Payload Label Mismatch Communications, **{rr} CS**, HP Payload Label Mismatch-cleared
NR	hpf_rdi	HPRDI (was RFI-P)	Communications, **{rr} CS**, HP Remote Defect Indication Communications, **{rr} CS**, HP Remote Defect Indication-cleared
NR	hpf_deg	HPDEG	Communications, **{rr} CS**, HP Signal Degrade Communications, **{rr} CS**, HP Signal Degrade-cleared
CR	hpf_tim	HPTIM (was TIMM)	Communications, **{rr} CS**, HP Trace Identifier Mismatch Communications, **{rr} CS**, HP Trace Identifier Mismatch-cleared
CR	hpf_uneq	HPUNEQ (was UNEQ-P)	Communications, **{rr} CS**, HP Unequip Communications, **{rr} CS**, HP Unequip-cleared

Table A-28 PT ASAP profile *(continued)*

Alarm level	ASAP parameter	condtype	conddescr The Alarm Issue Point (entity is **bolded**)
Properties of the following alarms/events Type of AID: vcg trib AID Alarm Duration: persistent modifier / aidtype: VC3, VC4			
CR	hpf_lom	LOM	Communications, **{rr} CS**, Loss of Multiframe Communications, **{rr} CS**, Loss of Multiframe-cleared
CR	hpf_sqm	SQM	Communications, **{rr} CS**, Sequence Number Mismatch Communications, **{rr} CS**, Sequence Number Mismatch-cleared

Table A-29 SDH ASAP profile

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent modifier / aidtype: STM1, STM1E, STM4, STM16, STM64				
CR	MN	sa_stmf_los nsa_stmf_los	STMLOS	Communications, **{rr} port**, STM Loss of Signal Communications, **{rr} port**, STM Loss of Signal-cleared
CR	MN	sa_stmf_los nsa_stmf_los	STMLOS	Communications, **{rr} port**, STM Loss of Signal Communications, **{rr} port**, STM Loss of Signal-cleared
CR	MN	sa_plos nsa_plos	PLOS	Communications, **{rr} port**, Pulsed Loss of Signal Communications, **{rr} port**, Pulsed Loss of Signal-cleared
CR	MN	sa_rsf_lof nsa_rsf_lof	STMLOF	Communications, **{rr} port**, STM Loss of Frame Communications, **{rr} port**, STM Loss of Frame-cleared
NR	NR	sa_msf_ais nsa_msf_ais	MSAIS	Communications, **{rr} port**, MSect Alarm Indication Signal Communications, **{rr} port**, MSect Alarm Indication Signal-cleared
NR	NR	sa_msf_rdi nsa_msf_rdi	MSRDI	Communications, **{rr} port**, MSect Remote Failure Indication Communications, **{rr} port**, MSect Remote Failure Indication-cleared

Table A-29 SDH ASAP profile *(continued)*

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
CR	MN	sa_msf_exc nsa_msf_exc	MSEXC (thlev 3 to 5)	Communications, **{rr} port,** MSect Excessive Error Communications, **{rr} port**, MSect Excessive Error-cleared
MJ	MN	sa_msf_deg nsa_msf_de	MSDEG (thlev 5 to 9)	Communications, **{rr} port**, MSect Signal Degrade Communications, **{rr} port**, MSect Signal Degrade-cleared
NA	NA	sa_msf_ssf nsa_msf_ssf	MSSSF	Communications, **{rr} port**, MSect Server Signal Failure Communications, **{rr} port**, MSect Server Signal Failure-cleared
MN	MN	sa_dccrs nsa_dccrs	DCCRSF	Communications, **{rr} port**, DCC RSect Failure Communications, **{rr} port**, DCC RSect Failure-cleared
MN	MN	sa_dccms nsa_dccms	DCCMSF	Communications, **{rr} port**, DCC MSect Failure Communications, **{rr} port**, DCC MSect Failure-cleared
MN	MN	sa_lidrsmm nsa_lidrsmm	LIDRSM	Communications, **{rr} port**, LinkID RSect Mismatch Communications, **{rr} port**, LinkID RSect Mismatch-cleared
MN	MN	sa_lidmsmm nsa_lidmsmm	LIDMSM	Communications, **{rr} port**, LinkID MSect Mismatch Communications, **{rr} port**, LinkID MSect Mismatch-cleared
MN	MN	sa_unsrs nsa_unsrs	UNSRSF	Communications, **{rr} port**, User-Network Side RSect Failure Communications, **{rr} port**, User-Network Side RSect Failure-cleared
MN	MN	sa_unsms nsa_unsms	UNSMSF	Communications, **{rr} port**, User-Network Side MSect Failure Communications, **{rr} port**, User-Network Side MSect Failure-cleared

Table A-30 SYS ASAP profile

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: circuit pack Alarm Duration: temporary modifier / aidtype: COM			
NA	arst	AUTORESET	Processing error, **{cpname}/{cpqual}**, Autonomous Reset Note: issued just before a failed controller is reset due to a fatal software error.
NA	swerr	SFT	Processing error, **{cpname}/{cpqual}**, Software Error, fatal
	swerr		Processing error, **{cpname}/{cpqual}**, Software Error, non-fatal
NA	omerr	WKGMEM	Processing error, **{cpname}/{cpqual}**, Out of Memory Error
NA	ferr	PROGFLT (program flt)	Processing error, **Sys Ctlr Ck Pk**, File Error, {affected NVM/error type}
Properties of the following alarms/events Type of AID: system Alarm Duration: temporary modifier / aidtype: COM			
NA	stqlc	SYNCSTATCHNG (sync status chg)	Communications, **System Timing**, System Timing Quality Level Chg
Properties of the following alarms/events Type of AID: system Alarm Duration: temporary modifier / aidtype: EQPT			
NA	adbf	DBMEMTRF	Equipment, **System**, Auto Database Backup Failure
NR	almtst	TSA	Equipment, **System**, Alarm Test
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent modifier / aidtype / rr: STM1, STM4, STM16, STM64			
NA	dccrsdu	EOC (embedded operations channel)	Communications, **{rr} port**, DCC RSect Disable - Unavailable Communications, **{rr} port**, DCC RSect Disabled-Unavailable-cleared

Table A-30 SYS ASAP profile *(continued)*

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
NA	dccmsdu	OSILINKERR	Communications, **{rr} port**, DCC MSect Disabled-Unavailable Communications, **{rr} port**, DCC MSect Disabled-Unavailable-cleared
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent modifier / aidtype / rr: STM1, STM4, STM16, STM64			
NA	dcctypm	EOC (embedded operations channel)	Communications, **{rr} port**, DCC Type Mismatch Communications, **{rr} port**, DCC Type Mismatch-cleared

Table A-31 TIMING ASAP profile

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: timing reference Alarm Duration: persistent modifier / aidtype: COM			
MJ	syncref	SYNC	Communications, **Assgn Tmg Ref**, Sync Reference Failure Communications, **Assgn Tmg Ref**, Sync Reference Failure-cleared
NR	linesync	SYNC	Communications, **Assgn Tmg Ref**, Line Sync Reference Failure Communications, **Assgn Tmg Ref**, Line Sync Reference Failure-cleared
MN	clkoutq	CLKOUTQF	Communications, **System Timing**, ClkOut Quality Failure Communications, **System Timing**, ClkOut Quality Failure-cleared
Properties of the following alarms/events Type of AID: system Alarm Duration: persistent modifier / aidtype: COM			
MN	holdover	HLDOVRSYNC	Communications, **System Timing**, System Clock Holdover Communications, **System Timing**, System Clock Holdover-cleared

Table A-32 TIMING ASAP profile

Alarm level	**ASAP parameter**	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: logical tributary Alarm Duration: persistent modifier / aidtype / rr: VC3, VC4, VC44C, VC416C			
CR	sa_auf_lop nsa_auf_lop	AULOP	Communications **{rr} CS**, AU Loss of Pointer Communications **{rr} CS**, AU Loss of Pointer-cleared
NR	sa_auf_ais nsa_auf_ais	AUAIS	Communications, **{rr} CS**, AU Alarm Indication Signal Communications, **{rr} CS**, AU Alarm Indication Signal-cleared
NR	sa_hpf_rdi nsa_hpf_rdi	HPRDI	Communications, **{rr} CS**, HP Remote Defect Indication Communications, **{rr} CS**, HP Remote Defect Indication-cleared
CR	sa_hpf_uneq nsa_hpf_uneq	HPUNEQ	Communications, **{rr} CS**, HP Unequip Communications, **{rr} CS**, HP Unequip-cleared
NR	sa_hpf_exc nsa_hpf_exc	HPEXC (thlev 3 to 5)	Communications, **{rr} CS**, HP Excessive Error Communications, **{rr} CS**, HP Excessive Error-cleared
NR	sa_hpf_deg nsa_hpf_deg	HPDEG (thlev 5 to 9)	Communications, **{rr} CS**, HP Signal Degrade Communications, **{rr} CS**, HP Signal Degrade-cleared
MJ	sa_auf_srm nsa_auf_srm	AUSRM	Communications, **{rr} CS**, AU Signal Rate Mismatch Communications, **{rr} CS**, AU Signal Rate Mismatch-cleared

The following alarms cannot have their alarm level changed and thus do not belong to an ASAP profile.

Table A-33 Non provisionable alarms

Alarm level	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: system Alarm Duration: temporary modifier / aidtype: EQPT		
NA	SYSBOOT	Equipment, **System**, System Restart Note: System is on its way up, regardless of reason. Operating system is fully initialized and application software is beginning to initialize.
NA	INIT-1	Equipment, **System**, Startup/Initialization Complete Note: System/shelf is up, application fully initialized.
NA	SCMMA (state chg, manual maintenance action)	Equipment, **System**, System in Maintenance Condition
NA	UPGRDF	Equipment, **System**, Upgrade Failed
Properties of the following alarms/events Type of AID: system Alarm Duration: persistent modifier / aidtype: EQPT		
NA	RCVRY	Equipment, **System**, System in Restoration Mode Equipment, **System**, System in Restoration Mode-cleared
Properties of the following alarms/events Type of AID: shelf Alarm Duration: temporary modifier / aidtype: EQPT		
NA	SSF	Security, **System**, Startup/Initialization Failure
Properties of the following alarms/events Type of AID: system Alarm Duration: temporary modifier / aidtype: COMn		
NA	MAN	Security, **System**, Intruder Alert

Table A-33 Non provisionable alarms *(continued)*

Alarm level	**condtype**	**conddescr** The alarmed entity is **bolded**
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent modifier / aidtype I rr: STM16, STM64		
NA	T-{montype}	Quality of service, **{rr} port**, Threshold Crossing Alert Quality of service, **{rr} port**, Threshold Crossing Alert-cleared This is for the physical layer.
Properties of the following alarms/events Type of AID: port Alarm Duration: temporary modifier / aidtype / rr: STM1, STM1E, SMT4, STM16, STM64		
NA	T-{montype}	Quality of service, **{rr} port**, Threshold Crossing Alert.
Properties of the following alarms/events Type of AID: logical tributary Alarm Duration: temporary modifier / aidtype / rr: VC3, VC4		
NA	T-{montype}	Quality of service, **{rr} CS**, Threshold Crossing Alert.

Protection switching event parameter tables

Protection switch notification tables

When there is a transition into a new state, protection switching events are reported by **REPT EVT** autonomous messages. These messages utilize *modifier*, *condtype*, and *conddescr* parameters.

These notes are referred to in the following tables:

Note 1: *condtype* is WKSWPR-2 for a switch to protection or WKSWBK for a switch to working. If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP.

Note 1a: *condtype* is WKSWPR-ep or WKSWPR-wp for a switch to protection or WKSWBK for a switch to working. If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP.

Note 2: *condtype* is WKSWPR-N for a switch to protection or WKSWBK for a switch to working (N is the letter N, not a variable). If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP.

Note 3: *condtype* is PS for a protection switch. If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP (General Purpose).

General note: the *condtype* value of GP is not available until the 6/2000 releases.

Table A-34 1XNELEC protection type

Switch request state	Lockout state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: circuit pack modifier: EQPT			
forced		WKSWPR-N, WKSWBK, GP (Note 2)	Protection switch, EQPT, Forced switch
no request		Note 2	Protection switch, EQPT, No request
equip failed		Note 2	Protection switch, EQPT, EQF
wtr		Note 2	Protection switch, EQPT, WTR
manual		Note 2	Protection switch, EQPT, Manual switch
lockout	lockout	INHSWPR	Protection switch, EQPT, Lockout
	no lockout	INHSWPR	Protection switch, EQPT, No lockout

Table A-35 1+1 optical, revertive protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr: STM1, STM4, STM16, STM64		
lockout	WKSWPR-2, WKSWBK, GP (Note 1)	Protection switch, {rr} port, Lockout switch,, 1+1
forced	Note 1	Protection switch, {rr} port, Forced switch,, 1+1
no request	Note 1	Protection switch, {rr} port, No request,, 1+1
signal failed	Note 1	Protection switch, {rr} port, SF,, 1+1
signal degraded	Note 1	Protection switch, {rr} port, SD,, 1+1
wtr	Note 1	Protection switch, {rr} port, WTR,, 1+1
manual	Note 1	Protection switch, {rr} port, Manual switch,, 1+1

Table A-36 1+1 optical, nonrevertive protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr:: STM1, STM4, STM16, STM64		
lockout	PS, GP (Note 3)	Protection switch, {rr} port, Lockout switch,, 1+1
forced	Note 3	Protection switch, {rr} port, Forced switch,, 1+1
no request	Note 3	Protection switch, {rr} port, No request,, 1+1
signal failed	Note 3	Protection switch, {rr} port, SF,, 1+1
signal degraded	Note 3	Protection switch, {rr} port, SD,, 1+1
do not revert	Note 3	Protection switch, {rr} port, DNR,, 1+1
manual	Note 3	Protection switch, {rr} port, Manual switch,, 1+1

Table A-37 1+1 optical (optimum) protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr:: STM1, STM4, STM16, STM64		
lockout	PS, GP (Note 3)	Protection switch, {rr} port, Lockout switch,, 1+1
forced	Note 3	Protection switch, {rr} port, Forced switch,, 1+1
no request	Note 3	Protection switch, {rr} port, No request,, 1+1
signal failed	Note 3	Protection switch, {rr} port, SF,, 1+1
signal degraded	Note 3	Protection switch, {rr} port, SD,, 1+1
do not revert	Note 3	Protection switch, {rr} port, DNR,, 1+1
failure of protocol	Note 3	Protection switch, {rr} port, FOP,, 1+1

The **REPT EVT** command is used to report 1+1 equipment protection switch state changes that do not result in a change of active units. The switch request state can have the following values: force, no request.

There can also be a switch state change due to equipment failure, but this does not result in a protection switch notification via **REPT EVT**. Even though the protection switch notification is not sent via **REPT EVT**, it may be entered in the notification log. The clearing of the equipment failure may result in a no request message.

Table A-38 1+1 equipment protection type

Switch request state	condtype	conddescr / comment
forced	GP	Protection switch, EQPT, Forced switch
no request	GP	Protection switch, EQPT, No request

Starting in Release 3, **REPT EVT** messages will be issued for 1+1 equipment protection switch state changes that result in a change of active units (this is in addition to the current **REPT EVT** messages for a state change of inactive units). This results in the additional switch state value of manual.

Starting in Release 3, if the current switch state is no request and equipment failure occurs (independent whether active or non-active unit fails), switch state is updated to indicate the failure. This results in the additional switch state value of equip failed.

Starting in Release 3, the protection group AID is reported.

These changes are shown in the following table:

Table A-39 1+1 equipment protection type additions

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: protection group modifier: COM		
forced	GP	Protection switch, EQPT, Forced switch
no request	GP	Protection switch, EQPT, No request
manual	PS, GP (Note 3)	Protection switch, EQPT, Manual switch
equip failed	Note 3	Protection switch, EQPT, EQF

Table A-40 1XNOPT protection type

Switch request state	**Lockout state**	**condtype**	**conddescr / comment**
Properties of the following switch notifications Type of AID: port modifier and rr: STM1, STM4, STM16, STM64			
forced		WKSWPR-N, WKSWBK, GP (Note 2)	Protection switch, {rr} port, Forced switch,, 1xNOPT
no request		Note 2	Protection switch, {rr} port, No request,, 1xNOPT
signal failed		Note 2	Protection switch, {rr} port, SF,, 1xNOPT
signal degraded		Note 2	Protection switch, {rr} port, SD,, 1xNOPT
wtr		Note 2	Protection switch, {rr} port, WTR,, 1xNOPT
manual		Note 2	Protection switch, {rr} port, Manual switch,, 1xNOPT
	lockout	INHSWPR	Protection switch, {rr} port, Lockout,, 1xNOPT
	no lockout	INHSWPR	Protection switch, {rr} port, No lockout,, 1xNOPT

Table A-41 PATHDRI / CONSTITUENTPATH protection types

Switch request state	**condtype**	**conddescr / comment**
Properties of the following switch notifications Type of AID: protection group modifier and rr: VC3, VC4, VC44C, VC416C		
lockout	WKSWPR-2, WKSWBK, GP (Note 1)	Protection switch, {rr} CS, Lockout switch
forced	Note 1	Protection switch, {rr} CS, Forced switch
no request	Note 1	Protection switch, {rr} CS, No request Note: If OPR-WKGLEG causes a protection switch for a revertive PATHDRI protection group, then a “No request” autonomous message is issued.
signal failed	Note 1	Protection switch, {rr} CS, SF
signal degraded	Note 1	Protection switch, {rr} CS, SD
wtr	Note 1	Protection switch, {rr} CS, WTR
manual	Note 1	Protection switch, {rr} CS, Manual switch

Table A-42 2F protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr: STM16, STM64		
LP-A, LS-R, LP-S	WKSWPR-2, WKSWBK, GP (Note 1)	Protection switch, {rr} port, Lockout switch, LPA, 2F Also LSR, LPS.
SF-P, SF-S, SF-R	Note 1	Protection switch, {rr} port, Signal fail, SFP, 2F Previously: Protection switch, {rr} port, SFP,, 2F Also SFS, SFR.
FS-R	Note 1	Protection switch, {rr} port, Forced switch, FSR, 2F
SD-R	Note 1	Protection switch, {rr} port, Signal degrade, SDR, 2F
MS-R	Note 1	Protection switch, {rr} port, Manual switch, MSR, 2F
WTR	Note 1	Protection switch, {rr} port, Wait to restore, WTR, 2F
EXER-S, EXER-R	Note 1	Protection switch, {rr} port, Exercise, EXR, 2F
RR-R	Note 1	Protection switch, {rr} port, Reverse request, RRR, 2F
NR	Note 1	Protection switch, {rr} port, No request, NR, 2F.

Table A-43 Timing reference protection type

Switch request state	Lockout state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: timing reference modifier COM			
manual		PS, GP (Note 3)	Protection switch, sync reference, Manual switch
forced		Note 3	Protection switch, sync reference, Forced switch
wait to restore		Note 3	Protection switch, sync reference, WTR
reference failed		Note 3	Protection switch, sync reference, REF
no request		Note 3	Protection switch, sync reference, No request
	lockout	INHSWPR	Protection switch, sync reference, Lockout
	no lockout	INHSWPR	Protection switch, sync reference, No lockout

Table A-44 Clock mode protection type

Current selection state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: system modifier COM		
free running	FRNGSYNC	Protection switch, clock mode, Freerunning
holdover (via forced switch)	HLDOVRSYNC	Protection switch, clock mode, Forced holdover
holdover (via all references failed)	HLDOVRSYNC	Protection switch, clock mode, Holdover
locked	SYNCCLK	Protection switch, clock mode, Locked

□

Password character parameter tables

Password requirements/ restrictions

All passwords must begin with an alpha character. The maximum character-length for a password is 10 alphanumeric characters. The minimum character-length allowed for a password is six alphanumeric characters. The keyword ALL, in any combination of upper and lower case, is disallowed as a password.

Allowed password characters

The following table lists the characters allowed in a password.

Table A-45 Allowed password characters

ASCII character	Description	Code (hex)
A .. Z	Upper case letters	41 .. 5A
a .. z	Lower case letters	61 .. 7A
0 .. 9	Digits	30 .. 39
‘	Apostrophe	27
-	Hyphen	2D
(	Left parenthesis	28
)	Right parenthesis	29
.	Period (full stop)	2E
/	Slash (Solidus)	2F
+	Plus sign	2B
!	Exclamation mark	21
*	Asterisk	2A
[	Left square bracket	5B
]	Right square bracket	5D
^	Caret	5E
‘	Grave accent	60
{	Left curly brace	7B
|	Vertical bar	7C
}	Right curly brace	7D
<	Less than	3C
>	Greater than	3E
~	Tilde	7E

Table A-45 Allowed password characters *(continued)*

ASCII character	Description	Code (hex)
%	Percent sign	25
#	Number sign	23

Disallowed password characters

The following table lists the characters disallowed in a password.

Table A-46 Disallowed password characters

ASCII character	Description	Code (hex)
	Space	20
@	Commercial at	40
,	Comma	2C
:	Colon	3A
=	Equals sign	3D
“	Quotation mark	22
;	Semicolon	3B
&	Ampersand	26
_	Horizontal bar (underscore)	5F
?	Question mark	3F

□

Abbreviations

5ESS
Number 5 Electronic Switching System

A **ABN**
Abnormal (condition)

ABS
Absent

AC
Alternating Current

ACO
Alarm Cut-Off

ACT
Active

ACU
Alarm Collection Unit (RR)

ADJCTL/DCC
Adjunct Control/32 Data Communication Channels circuit pack

ADJCTL/DCCEI
Adjunct Control/32 Data Communication Channels with External Interface circuit pack

ADM
Add/Drop Multiplexer

ADR
Add/Drop Ring

AGNE
Alarm Gateway Network Element

AID
Access Identifier

AIS
Alarm Indication Signal

AITS
Acknowledged Information Transfer Service: Confirmed mode of operation of the LAPD protocol.

ALS
Automatic Laser Shutdown

AMI
Alternate Mark Inversion

ANSI
American National Standards Institute

APD
Avalanche PhotoDiode

APS
Automatic Protection Switch

ARM
Adaptive Receiver Module

AS&C
Alarm, Status, and Control

APSD
Automatic Power Shutdown

AS
Alarm Suppression assembly

ASCII
American Standard Code for Information Interchange

ASN.1
Abstract Syntax Notation 1

ATC
Auxiliary Transmission Channel

ATM
Asynchronous Transfer Mode

ATPC
Automatic Transmit Power Control

AU
Administrative Unit

AU PTR
Administrative Unit Pointer

AU4AD
Administrative Unit 4 Assembler/Disassembler

AUG
Administrative Unit Group

AUTO
Automatic

AVAIL
Available

B

B3ZS
Bipolar 3-Zero Substitution

B8ZS
Bipolar 8-Zero Substitution

BBTR
Backplane Bus Transceiver

BCLAN
Board Controller Local Area Network

BDFB
Battery Distribution and Fuse Bay

BER
Bit Error Rate

BIN
Binary

BIP-N
Bit Interleaved Parity-N

BISDN
Broadband Integrated Services Digital Network

BLK
Blank

BOC
Bell Operating Company

BSW
Byte Switch circuit pack

BUSTR
BUS Transmitter and Receiver

C

C
Container

CAS
Channel Associated Signalling

CAT
Catastrophic

CC
Cross-Connection

CCITT
Comité Consultatif International Télégrafique & Téléphonique

CCS
Common Channel Signaling

CDRH
Center for Devices and Radiological Health

CEPT
Conférence Européenne des Administrations des Postes et des Télécommunications

CILINK
Communication Interface Link

CIT
Craft Interface Terminal

CL
Clear

CLEI
Common Language Equipment Identifier

CLLI
Common Language Location Identifier

CM
Configuration Management

CMI
Coded Mark Inversion

CMIP
Common Management Information Protocol. OSI standard protocol for OAM&P information exchange.

CMISE
Common Management Information Service Element

CO
Central Office

CP
Circuit Pack

CPE
Customer Premises Equipment

CR
Critical (alarm)

CRC
Cyclical Redundancy Check

CSIEX
Controlled System Interface Expander circuit pack

CSMA/CD
Carrier Sense Multiple Access with Collision Detection

CS&O
Lucent Technologies Customer Support and Operations

CSU
Channel Service Unit

CTIP
Customer Training and Information Products

CTL
Control (circuit pack prefix)

CTL/EI
Control/External Interface circuit pack

CTL/MEM
Control/Memory circuit pack

CTL/SR50DC
Sub-Rack Duplex (MCA 50D) circuit pack

CTL/SYS50D
System Controller Duplex (MCA 50D) circuit pack

CTL/SYS50DM
System Controller Duplex (MCA 50D) with Non-Volatile Memory circuit pack

CTLI-D
Control Interface to Device

CTS
Customer Technical Support within Lucent Technologies

CV
Coding Violation

CW
Continuous Wave (laser)

D **DACS**
Digital Access Cross-Connect System

dB
Decibels

DC
Direct Current

DCC
Data Communications Channel

DCE
Data Communications Equipment

DCN
Data Communications Network

DCS
Digital Cross-Connect System

DDF
Digital Distribution Frame

DIL
Dual In Line

DPLL
Digital Phase Locked Loop

DP-RING
Dedicated Protection Ring

DR
Digital Radio

DRI
Dual Ring Interworking

DRAM
Dynamic Random Access Memory

DS-NE
Directory Service Network Element

DSX
Digital Cross-Connect Frame

DTE
Data Terminating Equipment

DTMF
Dual Tone Multifrequency

DUS
Do not Use for Synchronization

DWDM
Dense Wavelength Division Multiplexing

E

EBER
Equivalent Bit Error Rate

EC
Echo Canceller

ECC
Embedded Control Channel

ECI
Equipment Catalog Item

EEPROM
Electrically Erasable Programmable Read-Only Memory

EF
Equipment Fail

EIA
Electronic Industries Association

EM
Event Management

EMC
Electromagnetic Compatibility

EMI
Electromagnetic Interference

EMS
Element Management System

EPROM
Erasable Programmable Read-Only Memory

EPS
Equipment Protection Switch

EQ
Equipped

EQPT
Equipment

ES
Errored Seconds

ES
End System

ESD
Electrostatic Discharge

ESF
Extended Super Frame (DS1 signal format)

ETSI
European Telecommunications Standards Institute

EVT
Event

F **FCC**
Federal Communications Commission

FDA
Food and Drug Administration

FDDI
Fiber Distributed Data Interface

FE
Far End

FEBE
Far End Block Error

FEC
Forward Error Correction

FEPROM
Flash EPROM

FIT
Failure in Time

G **GB**
Gigabytes

Gb/s
Gigabits per second

GHz
Gigahertz

GNE
Gateway Network Element

GR
Geographic Redundancy

H **HDB3**
High Density Bipolar 3

HDLC
High-Level Data Link Control

HE
Host Exchange

HMI
Human Machine Interface

HO
High Order

HPA
Higher Order Path Adaptation

HPC
Higher Order Path Connection

HPT
Higher Order Path Termination

HP-UX
Unix Operating System for Hewlett Packard platform

HS
High Speed

HW
Hardware

Hz
Hertz

I **IAO LAN**
Intraoffice Local Area Network

ID
Identifier

IEC
International Electrotechnical Commission

IEEE
Institute of Electrical and Electronics Engineers

I/O
Input/Output

IMF
Infant Mortality Factor

INTFC
Interface

IS
In Service

ISDN
Integrated Services Digital Network

ISM
Intelligent Synchronous Multiplexer

ITCO
Independent Telephone Company

ITM
Integrated Transport Management

ITM-NM
Integrated Transport Management Network Module

ITM-SC
Integrated Transport Management Subnetwork Controller

ITU
International Telecommunications Union

ITU-R
International Telecommunications Union — Radio standardization sector. Formerly known as CCIR: Comité Consultatif International Radio; International Radio Consultative Committee.

ITU-T
International Telecommunications Union — Telecommunication standardization sector. Formerly known as CCITT: Comité Consultatif International Télégrafique & Téléphonique; International Telegraph and Telephone Consultative Committee.

IXC
Interexchange Carrier

K **Kb/s**
Kilobits per second

L

LAN
Local Area Network

LATA
Local Access and Transport Area

LBC
Laser Bias Current

LBFC
Laser Backface Currents

LCN
Local Communications Network

LCT
Large Capacity Terminal

LEC
Local Exchange Carrier

LED
Light-Emitting Diode

LEN
Local Exchange Node

LGX
Lightguide Cross-Connect

LH
Long Haul

LO
Low Order

LOF
Loss of Frame

LOM
Loss Of Multiframe

LOP
Loss of Pointer

LOS
Loss of Signal

LPA
Lower order Path Adaptation

LPBK
Loopback

LPC
Lower Order Path Connection

LPT
Lower Order Path Termination

LS
Low Speed

LTE
Line Terminating Equipment

M

m
Microns

❍m
Micrometer

MB
Megabytes

Mb/s
Megabits per second

MCOND
Maintenance Condition

MEM
Memory

MIPS
Millions of Instructions Per Second

MJ
Major (alarm)

MMI
Man-Machine Interface

MML
Human-Machine Language

MN
Minor (alarm)

MS
Multiplex Section

ms
Millisecond

MS-SPRing
Multiplex Section Shared Protection Ring

MSOH
Multiplex Section OverHead

MTBF
Mean Time Between Failures

MTBMA
Mean Time Between Maintenance Activities

MTIE
Maximum Time Interval Error

MTPI
Multiplexer Timing Physical Interface

MTS
Multiplex Timing Source

MTTR
Mean Time To Repair

N

NA
Not Applicable

NARTAC
North American Regional Technical Assistance Center

NCC
Network Communication Controller

NE
Network Element

NEBS
Network Equipment-Building System

NEE
Network Element Equivalent

NEF
Network Element Function

NEM
Network Element Manager

nm
Nanometer (10^{-9} meters)

NMA
Network Monitoring and Analysis System

NMON
Not Monitored

NMS
Network Management System

NNE
Non-SDH Network Element

NORM
Normal

NPI
Null Pointer Indication

NPPA
Non-Preemptible Protection Access

NRZ
Nonreturn to Zero

NSA
Non-Service Affecting

NSAP Address
Network Service Access Point Address (used in the OSI network layer 3)

NTF
No Trouble Found

NVM
Non-Volatile Memory

O **O&M**

Operation and Maintenance

OA

Optical Amplifier

OALAN

Overhead Access Local Area Network

OAM&P

Operations, Administration, Maintenance, and Provisioning

OC3/STM1/1.3LR4

Optical Carrier 3/Synchronous Transport Module 1 port unit in the 1.3❍ range with four bidirectional long reach ports.

OC3/STM1/1.3SR4

Optical Carrier 3/Synchronous Transport Module 1 port unit in the 1.3❍ range with four bidirectional short reach ports.

OC12/STM4/1.3LR2

Optical Carrier 12/Synchronous Transport Module 4 port unit in the 1.3❍ range with two bidirectional long reach ports.

OC12/STM4/1.3SR2

Optical Carrier 12/Synchronous Transport Module 4 port unit in the 1.3❍ range with two bidirectional short reach ports.

OC48/STM16

Optical Carrier 48/Synchronous Transport Module 16 port unit (generic reference to all OC48/STM16 port units).

OC48/STM16/1.3LR1

Optical Carrier 48/Synchronous Transport Module 16 port unit in the 1.3❍ range with one bidirectional long reach port.

OC48/STM16/1.5LR1

Optical Carrier 48/Synchronous Transport Module 16 port unit in the 1.5❍ range with one bidirectional long reach port.

OC48/STM16/DWDM01-16

Optical Carrier 48/Synchronous Transport Module 16 port unit in 16 different wavelengths that are compatible with ITU wavelengths and WaveStar OLS 40G/80G.

OC48/STM16/POU

Optical Carrier 48/Synchronous Transport Module 16 Passive Optic Unit port unit in 16 different wavelengths that are compatible with passive optical applications with dense wavelength division multiplexing systems. The 16 different codes of OC48/STM16/

POU port units are each designated by a 4-digit numeric suffix that corresponds to the frequency of the optical signal.

OC192/STM64/1.5IR1

Optical Carrier 192/Synchronous Transport Module 64 port unit in the 1.5❍ range with one bidirectional extended intermediate reach port.

OC192/STM64/1.5SR1

Optical Carrier 192/Synchronous Transport Module 64 port unit in the 1.5❍ range with one bidirectional short/intermediate reach port.

OC192/STM64/POU

Optical Carrier 192/Synchronous Transport Module 64 Passive Optic Unit port unit in 16 different wavelengths that are compatible with passive optical applications with dense wavelength division multiplexing systems. The 16 different codes of OC192/STM64/POU port units are each designated by a 4-digit numeric suffix that corresponds to the frequency of the optical signal.

OC192/STM64/WDM

Optical Carrier 192/Synchronous Transport Module 64 Wavelength Division Multiplexing port unit in the 1.5❍ range with one bidirectional short/intermediate reach port. The 40 different codes of OC192/STM64/WDM port units are each designated by a 4-digit numeric suffix that corresponds to the frequency of the optical signal. The OC192/STM64/WDM port units support 40 wavelengths for applications with WaveStar OLS 400G dense wavelength division multiplexing systems.

ODF

Optical Distribution Frame

OI

Operations Interworking

OLS

Optical Line System

OOF

Out-of-Frame

OOS

Out-of-Service

OPS/INE

Operations System for Intelligent Network Elements

OS

Operations System

OSI

Open Systems Interconnect

OSMINE
Operations Systems Modifications for the Integration of Network Elements

P

PCB
Printed Circuit Board

PCM
Pulse Code Modulation

PCMCIA
Personal Computer Memory Card International Association

PDH
Plesiochronous Digital Hierarchy

PI
Physical Interface

PM
Performance Monitoring

PMA
Performance Monitoring Application

PMD
Polarization Mode Dispersion

POH
Path Overhead

POP
Point of Presence

POTS
Plain Old Telephone Service

PP
Pointer Processing

PPROC/FO
Pointer Processor circuit pack for 192 STS-1 equivalents with fan out

PRC
Primary Reference Clock

PRI
Primary

PROTN
Protection

PROV
Provisioned

PSA
Partially Service Affecting

PSDN
Public Switched Data Network

PSF
Power Supply Filter

PSTN
Public Switched Telephone Network

PTE
Path Terminating Equipment

PTY
Parity

PVC
Permanent Virtual Circuit

PWR
Power

PWR ON
Power On

Q

QAF
Q Adapter Function (in NE)

QL
Quality Level

QOS
Quality of Service

QRSS
Quasi-Random Signal Source

R

RAM
Random Access Memory

RCV
Receive

RCVR
Receiver

REI
Remote Error Indicator

RF
Radio Frequency

RFI
Remote Failure Indication

RPP
Reliability Prediction Procedure

RSOH
Regenerator Section OverHead; part of SOH

RST
Regenerator Section Termination

RT
Remote Terminal

RTRV
Retrieve

RZ
Return to Zero

S

SA
Service Affecting

SAI
Station Alarm Interface

SASE
Stand Alone Synchronization Equipment

SCI
Station Clock Input

SCO
Station Clock Output

SD
Signal Degrade

SDH
Synchronous Digital Hierarchy

SDS
Standard Directory Service based on ANSI recommendation T1.245

SEC
Secondary

SES
Severely Errored Seconds

SF
Super Frame (DS1 signal format)

SLC
Subscriber Loop Carrier

SH
Short Haul

SNR
Signal-to-Noise Ratio

SNMS
Sub Network Management System

SOH
Section Overhead

SONET
Synchronous Optical Network

SPE
Synchronous Payload Envelope

SRM
Signal Rate Mismatch

SSM
Synchronization Status Message

SSM
Synchronization Status Marker

SSU_L
Synchronization Supply Unit — Local

SSU_T
Synchronization Supply Unit — Transit

STBY
Standby

STM-1, STM-N
Synchronous Transport Module, Levels 1 and N (155.52 Mb/s)

STM-4
Synchronous Transport Module Level 4 (622.08 Mb/s)

STM-4c
Synchronous Transport Module Level 4 Concatenated Signal (622.08 Mb/s)

STM-16
Synchronous Transport Module Level 16 (2488.32 Mb/s) (2.5 Gb/s)

STM-64
Synchronous Transport Module Level 64 (9953.28 Mb/s) (10 Gb/s)

STS-48
Synchronous Transport, Level 48

STS-48c
Synchronous Transport, Level 48Concatenated Signal

SVC
Switched Virtual Circuit

SWC
Switch Center

SWIEX
Switch Interface Expander circuit pack

SWIF
Switch Interface circuit pack

SWITCH/STS576
576X576 STS-1 Switch circuit pack

SWITCH/STS768
768X768 STS-1 Switch circuit pack

SYNC
Synchronizer

T **TA**
Technical Advisory

TABS
Telemetry Asynchronous Byte Serial (Protocol)

TARP
Target Identifiers Address Resolution Protocol

TBD
To Be Determined

TBOS
Telemetry Byte-Oriented Serial (Protocol)

TCA
Threshold-Crossing Alert

TDM
Time Division Multiplexing

THz
Terrahertz (10^{12} Hz)

TID
Target Identifier

TIRKS
Trunks Integrated Records Keeping System

TL1
Transaction Language 1

TMG/STRAT3
Stratum 3 Timing circuit pack

TR
Technical Requirement

TSA
Time Slot Assignment

TSI
Time Slot Interchange

TSO
Technical Support Organization

TU
Tributary Unit

TUG
Tributary Unit Group

U **UAS**
Unavailable Seconds

UITS
Unacknowledged Information Transfer Service. Unconfirmed mode of LAPD operation.

UNEQ
Path Unequipped

UPSR
Unidirectional Path-Switched Ring

V **V**
Volts

VAC
Volts Alternating Current

VC
Virtual Container

VDC
Volts Direct Current

VF
Voice frequency

VM
Violation Monitor

VMR
Violation, Monitor, and Removal

VT
Virtual Tributary

VT1.5
Virtual Tributary, Level 1.5

VT-G
Virtual Tributary Group

W

WAD
Wavelength Add/Drop

WAN
Wide Area Network

WaveStar™ OLS 40G/80G/400G
WaveStar Optical Line System 40G/80G/400G

WaveStar™ SNMS
WaveStar SubNetwork Management System (formerly known as ITM SNC [Integrated Transport Management SubNetwork Controller])

WDCS
Wideband Digital Cross-Connect System

WDM
Wavelength Division Multiplexing

WRT
Wait to Restore Time

X

X.25
An ITU standard defining the connection between a terminal and a public packet-switched network

Glossary

0×1 Line Operation
0×1 means unprotected operation. The connection between network elements has one bidirectional line (no protection line).

1+1 Line Protection
A protection architecture in which the transmitting equipment transmits a valid signal on both the working and protection lines. The receiving equipment monitors both lines. Based on performance criteria and OS control, the receiving equipment chooses one line as the active line and designates the other as the standby line.

A

Absent (ABS)
Used to indicate that a given circuit pack is not installed.

Access Identifier (AID)
A technical specification for explicitly naming entities (both physical and logical) of an NE using a grammar comprised of ASCII text, keywords, and grammar rules.

Active (ACT)
Used to indicate that a circuit pack or module is in-service and currently providing service functions.

Add/Drop Multiplexer (ADM)
The term for a synchronous network element capable of combining signals of different rates and having those signals added to or dropped from the stream.

ADJCTL/DCC

Circuit pack that terminates 32 DCC channels. The ADJCTL/DCC circuit pack is used in the System Controller **Alarm**
Visible or audible signal indicating that an equipment failure or significant event/ condition has occurred.

Alarm Correlation
The search for a directly-reported alarm that can account for a given symptomatic condition.

Alarm Cut-Off (ACO)
A button on the user panel used to silence audible alarms.

Alarm Cut-Off and Test (ACO/TST)
The name of a pushbutton on the user panel used to silence audible alarms.

Alarm Gateway Network Element (AGNE)
A defined Network Element in an alarm group through which members of the alarm group exchange information.

Alarm Indication Signal (AIS)
A code transmitted downstream in a digital network that indicates that an upstream failure has been detected and alarmed, if the upstream alarm has not been suppressed.

Alarm Severity
An attribute defining the priority of the alarm message. The way alarms are processed depends on the severity.

Alarm Suppression
Selective removal of alarm messages from being forwarded to the GUI or to network management layer OSs.

Alarm Throttling
A feature that automatically or manually suppresses autonomous messages that are not priority alarms.

Aligning
Indicating the head of a virtual container by means of a pointer, for example, creating an Administrative Unit (AU) or a Tributary Unit (TU).

Alternate Mark Inversion (AMI)
A line code that employs a ternary signal to convert binary digits, in which successive binary ones are represented by signal elements that are normally of alternative positive and negative polarity but equal in amplitude, and in which binary zeros are represented by signal elements that have zero amplitude.

American Standard Code for Information Interchange (ASCII)
A standard 7-bit code that represents letters, numbers, punctuation marks, and special characters in the interchange of data among computing and communications equipment.

Anomaly
A difference between the actual and desired operation of a function.

Assembly
Gathering together of payload data with overhead and pointer information (an indication of the direction of the signal).

Association

A logical connection between manager and agent through which management information can be exchanged.

Asynchronous

The essential characteristic of time-scales or signals such that their corresponding significant instants do not necessarily occur at the same average rate.

Asynchronous Transfer Mode (ATM)

A high-speed transmission technology characterized by high bandwidth and low delay. It utilizes a packet switching and multiplexing technique which allocates bandwidth on demand.

Attribute

Alarm indication level: critical, major, minor, or no alarm.

Autolock

Action taken by the system in the event of circuit pack failure/trouble. System switches to protection and prevents a return to the working circuit pack even if the trouble clears. Multiple protection switches on a circuit pack during a short period of time cause the system to autolock the pack.

Automatic (AUTO)

One possible state of a port or slot. When a port is in the AUTO state and a good signal is detected, the port automatically enters the IS (in-service) state. When a slot is in the AUTO state and a circuit pack is detected, the slot automatically enters the EQ (equipped) state.

Automatic Protection Switch

A protection switch that occurs automatically in response to an automatically detected fault condition.

Automatic Transmit Power Control (ATPC)

Reduces the transmitter power output level during normal propagation conditions, and increases the power output to maximum level during fading periods trying to maintain nominal receiver input level.

Autonomous Message

A message transmitted from the controlled Network Element to the subnetwork controller which was not a response to a subnetwork controller originated command.

Auto-Provisioning

The ability to detect the presence of equipment, validate it, and then assign the original values to the newly created entity’s programmable parameters. These parameters are maintained in NVM and/or hardware registers. If a user has predefined some (or all) of the parameters associated with the entity, the auto-provisioning function validates the request, perhaps using some of the pre-provisioned data, and then assigns the programmable parameter values accordingly.

B **Bandwidth**

The difference in Hz between the highest and lowest frequencies in a transmission channel. The data rate that can be carried by a given communications circuit.

Baud Rate

Transmission rate of data (bits per second) on a network link.

Bidirectional Line

A transmission path consisting of two fibers that handle traffic in both the transmit and receive directions.

Bidirectional Ring

A ring in which both directions of traffic between any two nodes travel through the same network elements (although in opposite directions).

Bidirectional Switch

Protection switching performed in both the transmit and receive directions.

Bipolar 3-Zero Substitution (B3ZS)

A line coding technique that replaces three consecutive zeros with a bit sequence having special characteristics accomplishing two objectives: first, this bit sequence accommodates the density requirements of the ones for digital T3 carrier, second, the sequence is recognizable at the destination (due to deliberate bipolar violations) and is removed to produce the original signal.

Bipolar 8-Zero Substitution (B8ZS)

A line coding technique that replaces eight consecutive zeros with a bit sequence having special characteristics accomplishing two objectives: First, this bit sequence accommodates the density requirements of the ones for digital T1 carrier; Second, the sequence is recognizable at the destination (due to deliberate bipolar violations) and is removed to produce the original signal.

Bit

The smallest unit of information in a computer, with a value of either 0 or 1.

Bit Error Rate (BER)

The ratio of error bits received to the total number of bits transmitted.

Bit Error Rate Threshold

The point at which an alarm is issued for bit errors.

Bit Interleaved Parity-N(BIP-N)

A method of error monitoring over a specified number of bits (BIP-3 or BIP-8).

Blank (BLK)

The status of a circuit pack slot that contains a bus extender (blank) circuit pack.

Board Controller Local Area Network (BCLAN)
The internal local area network that provides communications between the line and board controllers on the circuit packs associated with a high-speed line.

Bridge Cross-Connection
The setting up of a cross-connection leg with the same input tributary as that of an existing cross-connection leg. Thus, forming a 1:2 bridge from an input tributary to two output tributaries.

Broadband Communications
Voice, data, and/or video communications at greater than 2 Mb/s rates.

Byte
Refers to a group of eight consecutive binary digits.

C

Cell Relay
Fixed length cells. For example, ATM with 53 octets.

Central Office (CO)
A building where common carriers terminate customer circuits.

Channel
A sub-unit of transmission capacity within a defined higher level of transmission capacity.

Circuit
A set of transmission channels through one or more network elements that provides transmission of signals between two points, to support a single communications path.

Clear Channel (CC)
A digital circuit where no framing or control bits are required, thus making the full bandwidth available for communications.

Client
Computer in a computer network that generally offers a user interface to a server.

Closed Ring Network
A network formed of a ring-shaped configuration of network elements. Each network element connects to two others, one on each side.

Coding Violation (CV)
A performance monitoring parameter indicating that bipolar violations of the signal have occurred.

Collocated
System elements that are located in the same location.

Command Group

An administrator-defined group that defines commands to which a user has access.

Concatenation

A procedure whereby multiple virtual containers are associated one with each other resulting in a combined capacity that can be used as a single container across which bit sequence integrity is maintained.

Configuration Management (CM)

Subsystem that configures the network and processes messages from the network.

Consultative Committee for the International Telephone and Telegraph (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 Telecommunications Standards Sector (ITU-TSS).
, which provides the main control functions for WaveStar BandWidth Manager.

Control/Switch Complex

A Control/Switch Complex comprises either one equipped System Controller

Co-Resident

A hardware configuration where two applications can be active at the same time independently on the same hardware and software platform without interfering with each others functioning.

Correlation

A process where related hard failure alarms are identified.

Craft Interface Terminal (CIT)

The user interface terminal used by craft personnel to communicate with a network element.

Critical (CR)

Alarm that indicates a severe, service-affecting condition.

Cross-Connect Loopback

A cross-connection from an input tributary to the output of that same tributary via the cross-connect fabric.

Cross-Connect Rate

The attribute of a cross-connection that defines the constituent signal rate(s) it can carry. For a cross-connection with an STS-3/STM-1 "pipe" cross-connection rate, the constituent signals carried by the cross-connection can be either an STS-3c/STM-1c signal or three STS-3/STM-1 signals. Similarly, for a cross-connection with an STS-12/STM-4 "pipe" cross-connection rate, the constituent signals carried by the cross-connection can be either an STS-12c/STM-4c signal or an allowed mix of STS-12c/STM-1c signals and STS-3/STM-1 signals.

Cross-Connection

Path-level connections between input and output tributaries or specific ports within a single NE. Cross-connections are made in a consistent way even though there are various types of ports and various types of port protection. Cross-Connections are reconfigurable interconnections between tributaries of transmission interfaces.

Cross-Connection Leg

A one-way connection provisioned from one logical input tributary to one logical output tributary. Each leg is identified as an entity by its logical input and output tributaries, its cross-connection rate, and the type of cross-connection topology. The operation of retrieving cross-connections can be done in terms of cross-connection legs between specific logical tributaries.

Cross-Connection Type

A provisionable parameter whereby the user selects the type as *1 Way Point to Point*, or *2 Way Point to Point*.

Cross-Connect Map

Connection map for an SDH Network Element; contains information about how signals are connected between high speed time slots and low speed tributaries.

Cross Polarization Interference Cancellation

This feature permits both orthogonal polarizations of one Radio Frequency carrier to be used simultaneously, thus achieving greater spectral efficiency.

Crosstalk

An unwanted signal introduced into one transmission line from another.

Current Value

The value currently assigned to a provisionable parameter.

D

Data

A collection of system parameters and their associated values.

Database Administrator

A user who administers the database of the application.

Data Communications Channel (DCC)

The embedded overhead communications channel in the synchronous line, used for end-to-end communications and maintenance. The DCC carries alarm, control, and status information between network elements in a synchronous network.

Data Communications Equipment (DCE)

The equipment that provides signal conversion and coding between the data terminating equipment (DTE) and the line. The DCE may be separate equipment or an integral part of the DTE or of intermediate equipment. A DCE may perform other functions usually performed at the network end of the line.

Data Terminating Equipment (DTE)
The equipment that originates data for transmission and accepts transmitted data.

Dedicated Protection Ring (DP-Ring)
A protection method used in ISM Network Elements.

Default
An operation or value that the system or application assumes, unless a user makes an explicit choice.

Default Provisioning
The parameter values that are preprogrammed as shipped from the factory.

Defect
A limited interruption of the ability of an item to perform a required function. It may or may not lead to maintenance action depending on the results of additional analysis.

Demultiplexer
A device that splits a combined signal into individual signals at the receiver end of transmission.

Demultiplexing
A process applied to a multiplexed signal for recovering signals combined within it and for restoring the distinct individual channels of these signals.

Dense Wavelength Division Multiplexing (DWDM)
Transmitting two or more signals of different wavelengths simultaneously over a single fiber.

Deprovisioning
The inverse order of provisioning. To manually remove/delete a parameter that has (or parameters that have) previously been provisioned.

Digital Link
A transmission span such as a point-to-point 2 Mb/s, 34 Mb/s, 140 Mb/s, VC12, VC3 or VC4 link between controlled network elements. The channels within a digital link are insignificant.

Digital Multiplexer
Equipment that combines several digital signals into a single composite digital signal by time-division multiplexing.

Digital Section
A transmission span such as an STM-N or 565 Mb/s signal. A digital section may contain multiple digital channels.

Directory Service Network Element (DSNE)
A designated Network Element that is responsible for administering a database that maps Network Elements names (node names) to addresses (node Id). There can be one DSNE per (sub)network.

Dispersion
Time-broadening of a transmitted light pulse.

Dispersion Shifted Optical Fiber
1330/1550 nm minimum dispersion wavelength.

Disassembly
Splitting up a signal into its constituents as payload data and overhead (an indication of the direction of a signal).

Divergence
When there is unequal amplification of incoming wavelengths, the result is a power divergence between wavelengths.

Domain
Domain set of Network Elements that are controlled by that particular ITM-SC.

Doping
The addition of impurities to a substance in order to attain desired properties.

Downstream
At or towards the destination of the considered transmission stream, for example, looking in the same direction of transmission.

Drop and Continue
A circuit configuration that provides redundant signal appearances at the outputs of two network elements in a ring. Can be used for Dual Ring Interworking (DRI) and for video distribution applications.

Drop-Down Menu
A menu that is displayed from a menu bar.

DS3EC1/8
Port unit that provides 8 bidirectional ports at the DS3-rate or EC-1-rate.

DS3EC1 Connector Panel
The DS3EC1 Connector Panels provide an interface between the DS3EC1/8 port units and the backplane via BNC connectors.

Dual Ring Interworking (DRI)
A topology in which two rings are interconnected at two nodes on each ring and operate so that inter-ring traffic is not lost in the event of a node or link failure at an interconnecting point.

E **Electromagnetic Compatibility (EMC)**

A measure of equipment tolerance to external electromagnetic fields.

Electromagnetic Interference (EMI)

High-energy, electrically induced magnetic fields that cause data corruption in cables passing through the fields.

Electronic Industries Association (EIA)

A trade association of the electronic industry that establishes electrical and functional standards.

Electrostatic Discharge (ESD)

Static electrical energy potentially harmful to circuit packs and humans.

Entity

A specific piece of hardware (usually a circuit pack, slot, or module) that has been assigned a name recognized by the system.

Entity Identifier

The name used by the system to refer to a circuit pack, memory device, or communications link.

Equipped (EQ)

Status of a circuit pack or interface module that is in the system database and physically in the frame, but not yet provisioned.

Equivalent Bit Error Ratio (EBER)

The calculated average bit error rate over a data stream.

Errored Seconds (ES)

A performance monitoring parameter. ES “type A” is a second with exactly one error; ES “type B” is a second with more than one and less than the number of errors in a severely errored second for the given signal. ES by itself means the sum of the type A and type B ESs.

Establish

A user initiated command, at the WaveStar CIT, to create an entity and its associated attributes in the absence of certain hardware.

Event

A significant change. Events in controlled Network Elements include signal failures, equipment failures, signals exceeding thresholds, and protection switch activity. When an event occurs in a controlled Network Element, the controlled Network Element will generate an alarm or status message and send it to the management system.

Event Driven

A required characteristic of a network element or software system: NEs are reactive systems, primarily viewed as systems that wait for and then handle events. Events are provided by the external interface packages, the hardware resource packages, and also by the software itself.

Event Management (EM)
Subsystem of ITM-SC that processes and logs event reports of the network.

Express Ring
An express ring is a 10G-bit 2-fiber BLSR that is built using spare (available) fibers at an existing OC-48 NE which has exhausted its STS-1 capacity. The express ring is physically parallel to the existing OC-48 ring. As a contrast and where spare fibers are not available, an express ring cannot be constructed and the existing OC-48 ring must be upgraded to an OC-192 ring.

Externally Timed
An operating condition of a clock in which it is locked to an external reference and is using time constants that are altered to quickly bring the local oscillator's frequency into approximate agreement with the synchronization reference frequency.

Extra traffic
Unprotected traffic that is carried over protection channels when their capacity is not used for the protection of working traffic.

F

Facility Interface
The bottom portion of a Universal I/O which may be equipped, depending on the port units and circuit packs used, as an Optical or a Mixed Module.

Facility Loopback
A facility loopback is where an entire line is looped back.

Facility Roll
The disconnection of the circuit cross-connecting input tributary to an output tributary followed, within the required completion time (≤2.5 ms), by a cross-connection of an input tributary to an output tributary.

Facility/SWIF Interface
The bottom portion of a 10G I/O which may be equipped with OC192/STM64 port units and one to four pairs of SWIF packs.

Failures in Time (FIT)
Circuit pack failure rates per 10^9 hours as calculated using the method described in *Reliability Prediction Procedure for Electronic Equipment*, Telcordia Method I, Issue 5, September 1995.

Far End (FE)
Any other network element in a maintenance subnetwork other than the one the user is at or working on. Also called remote.

Far-End Block Error (FEBE)
An indication returned to the transmitting node that an errored block has been detected at the receiving node. A block is a specified grouping of bits.

Far-End Receive Failure (FERF)
An indication returned to a transmitting Network Element that the receiving Network Element has detected an incoming section failure. Also known as RDI (Remote Detect Indication).

Fault
Term used when a circuit pack has a hard (not temporary) fault and cannot perform its normal function.

Fault Management
Collecting, processing, and forwarding of autonomous messages from network elements.

Fiber Distributed Data Interface (FDDI)
Fiber interface that connects computers and distributes data among them.

Flash EPROM
A technology that combines the nonvolatility of EPROM with the in-circuit reprogrammability of EEPROM (electrically-erasable PROM).

Folded Rings
Folded (collapsed) rings are rings without fiber diversity. The terminology derives from the image of folding a ring into a linear segment.

Forced
Term used when a circuit pack (either working or protection) has been locked into a service-providing state by user command.

Frame
The smallest block of digital data being transmitted.

Frame Relay (FR)
A form of packet switching that relies on high-quality phone lines to minimize errors. It is very good at handling high-speed, bursty data over wide area networks. The frames are variable lengths and error checking is done at the end points.

Framework
An assembly of equipment units, such as a rack, that is capable of housing .

Free Running
An operating condition of a clock in which its local oscillator is not locked to an internal synchronization reference and is using no storage techniques to sustain its accuracy.

G

Gateway Network Element (GNE)

A network element that passes information between other network elements and management systems through a data communication network.

Global Wait to Restore Time

Corresponds to the time to wait before switching back to the timing reference. It occurs after a timing link failure has cleared. This time applies for all timing sources in a system hence the name global. This can be between 0 and 60 minutes, in increments of one minute.

H

Hard Failure

An unrecoverable nonsymptomatic (primary) failure that causes signal impairment or interferes with critical network functions, such as DCC operation.

High Density Bipolar 3 Code (HDB3)

Line code for 2 Mb/s transmission systems.

High Level Data Link Control (HDLC)

OSI reference model datalink layer protocol.

Higher Order Path Adaptation (HPA)

Function that adapts a lower order Virtual Container to a higher order Virtual Container by processing the Tributary Unit pointer which indicates the phase of the lower order Virtual Container Path Overhead relative to the higher order Virtual Container Path Overhead and assembling/disassembling the complete higher order Virtual Container.

Higher Order Path Connection (HPC)

Function that provides for flexible assignment of higher order Virtual Containers within an STM-N signal.

Higher Order Path Termination (HPT)

Function that terminates a higher order path by generating and adding the appropriate Virtual Container Path Overhead to the relevant container at the path source and removing the Virtual Container Path Overhead and reading it at the path sink.

Holdover

An operating condition of a clock in which its local oscillator is not locked to an external reference but is using storage techniques to maintain its accuracy with respect to the last known frequency comparison with a synchronization reference.

Hot Standby

A circuit pack ready for fast, automatic placement into operation to replace an active circuit pack. It has the same signal as the service going through it, so that choice is all that is required.

Human Machine Language (MML)
A standard language developed by the ITU for describing the interaction between humans and dumb terminals.

I

Insert
To physically insert a circuit pack into a slot, thus causing a system-initiated restoral of an entity into service and/or creation of an entity and associated attributes.

In-Service (IS)
A memory administrative state for ports. IS refers to a port that is fully monitored and alarmed.

Integrated Transport Management Subnetwork Controller (ITM-SC)
Manager for SDH Network Elements in a subnetwork. Also referred to as Element Management System.

J

Jitter
Short term variations of amplitude and frequency components of a digital signal from their ideal position in time.

L

Lead Time
The time interval between placement of a product order and receipt of the product.

License Key
An encrypted code that is required to enable the use of specific modules in the ITM-SC. Valid license keys can be obtained from your provider.

Lightguide Build-Out (LBO)
An attenuating (signal-reducing) element used to keep an optical output signal strength within desired limits.

Line
A transmission medium, together with the associated equipment, required to provide the means of transporting information between two consecutive network elements. One network element originates the line signal; the other terminates it.

Line Controller Local Area Network (LCLAN)
The internal local area network that provides communications between the controlled circuit packs.

Line Protection
The optical interfaces can be protected by line protection. Line protection switching protects against failures of line facilities, including the interfaces at both ends of a line, the optical fibers, and any equipment between the two ends. Line protection includes protection of equipment failures.

Link
The mapping between in-ports and out-ports. It specifies how components are connected to one another.

Local Area Network (LAN)
A communications network that covers a limited geographic area, is privately owned and user administered, is mostly used for internal transfer of information within a business, is normally contained within a single building or adjacent group of buildings, and transmits data at a very rapid speed.

Local I/O Complex
A local I/O Complex is one or more co-located Universal I/O s that are electrically cabled to an associated Switch Complex.

Location
An identifier for a specific circuit pack, interface module, interface port, or communications link.

Logical Tributary
With regards to electrical ports and unprotected optical ports – a logical tributary is the same as the port tributary. With regards to port protection groups – a logical tributary is a path-level unit of bandwidth within a port protection group.

Loopback
Type of diagnostic test used to compare an original transmitted signal with the resulting received signal. A loopback is established when the received optical or electrical external transmission signal is sent from a port or tributary input directly back toward the output.

Loop Timing
A special case of line timing. It applies to network elements that have only one OC-N/STM-N interface. For example, terminating nodes in a linear network are loop timed.

Loss Budget
Loss (in dB) of optical power due to the span transmission medium (includes fiber loss and splice losses).

Lower Order Path Adaptation (LPA)
Function that adapts a PDH signal to a synchronous network by mapping the signal into or de-mapping the signal out of a synchronous container.

Lower Order Path Connection (LPC)
Function that provides for flexible assignment of lower order VCs in a higher order VC.

Lower Order Path Termination (LPT)
Function that terminates a lower order path by generating and adding the appropriate VC POH to the relevant container at the path source and removing the VC POH and reading it at the path sink.

M **Major**

Indicates a service-affecting failure, main or unit controller failure, or power supply failure.

Maintenance Condition

An equipment state in which some normal service functions are suspended, either because of a problem or to perform special functions (copy memory) that can not be performed while normal service is being provided.

Management Connection

Identifies the type of routing used (STATIC or DYNAMIC), and if STATIC is selected allows the gateway network element to be identified.

Manual Switch State

A protection group shall enter the Manual Switch State upon the initiation and successful completion of the Manual Switch command. The protection group leaves the Manual Switch state by means of the Clear or Forced Switch commands. While in the Manual Switch state the system may switch the active unit automatically if required for protection switching.

Mapping

The logical association of one set of values, such as addresses on one network, with quantities or values of another set, such as devices or addresses on another network.

Mediation Device (MD)

Allows for exchange of management information between Operations System and Network Elements.

Mid-Span Meet

The capability to interface between two lightwave network elements of different vendors. This applies to high-speed optical interfaces.

Minor (MN)

Indicates a non-service-affecting failure of equipment or facility.

Miscellaneous Discrete Interface

Allows an operations system to control and monitor equipment collocated within a set of input and output contact closures.

Mixed Module

One of the ways the bottom portion of a Universal I/O **Multiplexer**

A device (circuit pack) that combines two or more transmission signals into a combined signal on a shared medium.

Multiplexer Section OverHead (MSOH)

Part of the Section Overhead. MSOH is accessible only at line terminals and multiplexers.

Multiplexer Section Protection (MSP)
Provides capability for switching a signal from a working to a protection section.

Multiplexer Section Termination (MST)
Function that generates the Multiplexer Section OverHead in the transmit direction and terminates the part of the Multiplexer Section overhead that is acceptable in the receive direction.

Multiplexer Timing Source (MTS)
Function that provides timing reference to the relevant component parts of the multiplex equipment and represents the SDH Network Element clock.

Multiplexing
A procedure by which multiple lower order path layer signals are adapted into a higher order path, or the multiple higher order path layer signals are adapted into a multiplex section.

N

Network Element (NE)
A node in a telecommunication network that supports network transport services and is directly manageable by a management system.

Network Element Equivalent (NEE)
The functionality, database size and processing power required from the ITM-SC is different for each Network Element type supported. Therefore each type represents an amount of Network Element Equivalent.

Network Mediation Unit (NMU)
Used to collect fault and alarm events from transmission equipment. The ITM-SC can forward alarms to the NMU. The NMU can forward alarms to an Operations System.

Network Monitoring and Analysis (NMA)
An operations system designed by Telcordia which is used to monitor network facilities.

Network Service Access Point (NSAP) Address
Network Service Access Point Address (used in the OSI network layer 3). An automatically assigned number that uniquely identifies a Network Element for the purposes of routing DCC messages.

Node
A network element in a ring or, more generally, in any type of network. In a network element supporting interfaces to more than one ring, node refers to an interface that is in a particular ring. Node is also defined as all equipment that is controlled by one system controller. A node is not always directly manageable by a management system.

Non-Blocking Service Cross-Connection Capacity
The service cross-connection capacity that is guaranteed to the user to be free from blocking. The system architecture allows for terminating a total transmission capacity on the transmission interfaces that is in excess of the non-blocking service cross-

connection capacity of the system. Only the capacity that can be terminated on the main cross-connection fabric without blocking makes up the non-blocking service cross-connection capacity.

Non-Preemptible Protection Access (NPPA)

Non-preemptible protection access increases the available span capacity for traffic which does not require protection by a ring, but which cannot be preempted.

Non-Revertive Switching

In non-revertive switching, an active and standby line exist on the network. When a protection switch occurs, the standby line is selected to support traffic, thereby becoming the active line. The original active line then becomes the standby line. This status remains in effect even when the fault clears. That is, there is no automatic switch back to the original status.

Non-Synchronous

The essential characteristic of time-scales or signals such that their corresponding significant instants do not necessarily occur at the same average rate.

Non-Volatile Memory (NVM)

Memory that retains its stored data after power has been removed. An example of NVM would be a hard disk.

No Request State

This is the routine-operation quiet state in which no external command activities are occurring.

Not Monitored (NMON)

A provisioning state for equipment that is not monitored or alarmed.

Not Protected Domain

The not protected domain for the ITM-SC contains all the Network Elements which are managed by one ITM-SC and are not currently protected by another ITM-SC. If the ITM-SC fails, the Network Elements in this domain are not managed by any ITM-SC.

O

One-Way Path-Protected Cross-Connection

A two-legged interconnection between two **Open Ring Network**

A network formed of a linear chain-shaped configuration of network elements. Each network element connects to two others, one on each side, except for two network elements at the ends which are connected on only one side. A closed ring can be formed by adding a connection between the two end nodes.

Open Systems Interconnection (OSI)

Referring to the OSI reference model, a logical structure for network operations standardized by the International Standards Organization (ISO).

Operations Interface

Any interface providing you with information on the system behavior or control. These include the equipment LEDs, user panel, WaveStar CIT, office alarms, and all telemetry interfaces.

Operations Interworking (OI)

The capability to access, operate, provision, and administer remote systems through craft interface access from any site in a SONET/SDH network or from a centralized operations system.

Operations System (OS)

A central computer-based system used to provide operations, administration, and maintenance functions.

Optical Channel

An OC-N/STM-N wavelength within an optical line signal. Multiple channels, differing by 1.5❍ in wavelength, are multiplexed into one signal.

Optical Line Signal

A multiplexed optical signal containing multiple wavelengths or channels.

Optical Module

One of the three ways the bottom portion of a Universal I/O

Original Value Provisioning

Preprogramming of a system's original values at the factory. These values can be overridden using local or remote provisioning.

Outage

A disruption of service that lasts for more than 1 second.

Out-of-Service

The circuit pack is not providing its normal service function (removed from either the working or protection state) either because of a system problem or because the pack has been removed from service.

P

Parallel Telemetry

A set of alarms and status information reported to an operations center.

Parameter

A variable that is given a value for a specified application. A constant, variable, or expression that is used to pass values between components.

Parity Check

Tests whether the number of ones (or zeros) in an array of binary bits is odd or even; used to determine that the received signal is the same as the transmitted signal.

Pass-Through
Paths that are cross-connected directly across an intermediate node in a network.

Path
A logical connection between the point at which a standard frame format for the signal at the given rate is assembled, and the point at which the standard frame format for the signal is disassembled.

Path Overhead (POH)
Informational bytes assigned to, and transported with the payload until the payload is demultiplexed. It provides for integrity of communication between the point of assembly of a virtual container and its point of disassembly.

Path Terminating Equipment
Network elements in which the path overhead is terminated.

Performance Monitoring (PM)
Measures the quality of service and identifies degrading or marginally operating systems (before an alarm would be generated).

Peripheral Control and Timing Facility Interface (PCTFI)
A proprietary physical link interface supporting the transport of 21⑨2 Mb/s signals.

Platform
A family of equipment and software configurations designed to support a particular application.

Plesiochronous Network
A network that contains multiple subnetworks, each internally synchronous and all operating at the same nominal frequency, but whose timing may be slightly different at any particular instant.

Pointer
An indicator whose value defines the frame off-set of a virtual container with respect to the frame reference of the transport entity on which it is supported.

Polarization Mode Dispersion (PMD)
Output pulse broadening due to random coupling of the two polarization modes in an optical fiber.

Port (also called Line)
The physical interface, consisting of both an input and output, where an electrical or optical transmission interface is connected to the system and may be used to carry traffic between network elements. The words “port” and “line” may often be used synonymously. “Port” emphasizes the physical interface, and “line” emphasizes the interconnection. Either may be used to identify the signal being carried.

Port State Provisioning

A feature that allows a user to suppress alarm reporting and performance monitoring during provisioning by supporting multiple states (automatic, in-service, and not monitored) for low-speed ports.

Preprovisioning

The process by which the user specifies parameter values for an entity in advance of some of the equipment being present. These parameters are maintained only in NVM. These modifications are initiated locally or remotely by either a CIT or an OS. Preprovisioning provides for the decoupling of manual intervention tasks (for example, install circuit packs) from those tasks associated with configuring the node to provide services (for example, specifying the entities to be cross-connected).

Primary (PRI)

Designates a CTL/MEM circuit pack as the primary storage device for WaveStar BandWidth Manager.

Primary ITM-SC

ITM-SC that is usually managing a Network Element. If the primary ITM-SC fails, management of the Network Element is passed over to the secondary ITM-SC. A Network Element should be provisioned normally on the primary ITM-SC and then be configured for use on the secondary.

Primary Reference Clock (PRC)

The main timing clock reference in SDH equipment.

Proactive Maintenance

Refers to the process of detecting degrading conditions not severe enough to initiate protection switching or alarming, but indicative of an impending signal failure or signal degrade defect.

Protected Domain

The protected domain for an ITM-SC contains all the Network Elements for which this manager is the primary ITM-SC and is protected by another secondary ITM-SC.

Protecting Domain

The protecting domain for an ITM-SC contains all the Network Elements for which this manager is the secondary ITM-SC.

Protection

Extra capacity (channels, circuit packs) in transmission equipment that is not intended to be used for service, but rather to serve as backup against equipment failures.

Protection Access

To provision traffic to be carried by protection tributaries when the port tributaries are not being used to carry the protected working traffic.

Protection Group Configuration

The members of a group and their roles, for example, working protection, line number, etc.

Protection Path

One of two signals entering a path selector used for path protection switching or dual ring interworking. The other is the working path. The designations working and protection are provisioned by the user, whereas the terms active path and standby path indicate the current protection state.

Protection State

When the working unit is currently considered active by the system and that it is carrying traffic. The “active unit state” specifically refers to the receive direction of operation — since protection switching is unidirectional.

Provisioned (PROV)

Indicating that a circuit pack is ready to perform its intended function. A provisioned circuit pack can be active (ACT), in-service (IS), standby (STBY), provisioned out-of-service (POS), or out-of-service (OOS).

R

Reactive Maintenance

Refers to detecting defects/failures and clearing them.

Receive-Direction

The direction towards the Network Element.

Regeneration

The process of reconstructing a digital signal to eliminate the effects of noise and distortion.

Regenerator Loop

Loop in a Network Element between the Station Clock Output(s) and one or both Station Clock Inputs, which can be used to dejitterize the selected timing reference in network applications.

Regenerator Section Termination

Function that generates the Regenerator Section Overhead (RSOH) in the transmit direction and terminates the RSOH in the receive direction.

Reliability

The ability of a software system performing its required functions under stated conditions for a stated period of time. The probability for an equipment to fulfill its function. Some of the ways in which reliability is measured are: MTBF (Mean Time Between Failures) expressed in hours; Availability = (MTBF)/(MTBF+MTTR)(%) [where MTTR = mean time to restore]; outage in minutes per year; failures per hour; percentage of failures per 1,000 hours.

Remote Defect Indication (RDI)

An indication returned to a transmitting terminal that the receiving terminal has detected an incoming section failure. [Previously called far-end-receive failure (FERF).]

Remote Failure Indication (RFI)

A signal that alerts upstream path-terminating equipment that a downstream failure has been alarmed along the path. This action prevents multiple alarms from being activated for the same failure and ensures that a technician is dispatched to correct the failure. (Previously called yellow signals.)

Remote Network Element

Any Network Element that is connected to the referenced Network Element through either an electrical or optical link. It may be the adjacent node on a ring, or N nodes away from the reference. It also may be at the same physical location but is usually at another (remote) site.

Restore Timer

Counts down the time (in minutes) during which the switch waits to let the worker line recover before switching back to it. This option can be set to prevent the protection switch continually switching if a line has a continual transient fault. This field is grayed out if the mode is non-revertive.

Return to Zero

A code form having two information states (termed zero and one) and having a third state or an at-rest condition to which the signal returns during each period.

Revertive

A protection switching mode in which, after a protection switch occurs, the equipment returns to the nominal configuration (that is, the working equipment is active, and the protection equipment is standby) after any failure conditions that caused a protection switch to occur, clear, or after any external switch commands are reset. (See “Non-Revertive.”)

Revertive Switching

In revertive switching, there is a working and protection high-speed line, circuit pack, etc. When a protection switch occurs, the protection line, circuit pack, etc. is selected. When the fault clears, service “reverts” to the working line.

Ring

A configuration of nodes comprised of network elements connected in a circular fashion. Under normal conditions, each node is interconnected with its neighbor and includes capacity for transmission in either direction between adjacent nodes. Path switched rings use a head-end bridge and tail-end switch. Line switched rings actively reroute traffic over the protection capacity.

Roll Cross-Connection

A user operation which results in moving the input of any existing leg of any cross-connection from a given tributary to a second tributary, while leaving the output unchanged. Typically, a roll is used as a tail-end switch in a “facility or tributary rolling” operation, whereby traffic is moved from one facility to another or from one tributary to another on a facility. The head-end side of a facility or tributary roll usually has a bridge established (in one NE) so that the traffic flows on both the old and new facilities, minimizing the signal interruption time when the roll is carried out to that introduced by the roll itself (in the other NE). A roll is inherently a one-way operation, but because facilities are generally two-way, a head-end bridge/tail-end roll sequence is typically done on both directions.

Route

A series of contiguous digital sections.

Router

An interface between two networks. While routers are like bridges, they work differently. Routers provide more functionality than bridges. For example, they can find the best route between any two networks, even if there are several different networks in between. Routers also provide network management capabilities such as load balancing, partitioning of the network, and trouble-shooting.

S

Secondary (SEC)

Designates a secondary CTL/MEM circuit pack as the secondary storage device for WaveStar BandWidth Manager.

Section

The portion of a transmission facility, including terminating points, between a terminal network element and a line-terminating network element, or two line-terminating network elements.

Section Adaptation

Function that processes the AU-pointer to indicate the phase of the VC-3/4 POH relative to the STM-N SOH and assembles/disassembles the complete STM-N frame.

Section Overhead (SOH)

Capacity added to either an AU-4 or assembly of AU-3s to create an STM-1. Contains always STM-1 framing and optionally maintenance and operational functions. SOH can be subdivided in MSOH (multiplex section overhead) and RSOH (regenerator section overhead).

Self-Healing

A network’s ability to automatically recover from the failure of one or more of its components.

Server

Computer in a computer network that performs dedicated main tasks which generally require sufficient performance.

Severely Errored Seconds (SES)

This performance monitoring parameter is a second in which a signal failure occurs, or more than a preset amount of coding violations (dependent on the type of signal) occur.

Service

The operational mode of a physical entity that indicates that the entity is providing service. This designation will change with each switch action.

Service Cross-Connection Capacity

The capacity that can be used for carrying service traffic. Any cross-connection capacity that is required for transmission interface protection switching is separate and does not reduce the service cross-connection capacity.

Signal-to-Noise Ratio (SNR)

The relative strength of signal compared to noise.

Single-Ended Operations

Provides operations support from a single location to remote Network Elements in the same SONET subnetwork. With this capability you can perform operations, administration, maintenance, and provisioning on a centralized basis. The remote Network Elements can be those that are specified for the current release.

Single-Mode Fiber (SM)

An 8-❍ diameter low-loss, long-span optical fiber typically operating at either 1310 nm, 1550 nm, or both.

Site Address

The unique address for a Network Element.

Slot

A physical position in a designed for holding a circuit pack and connecting it to the backplane. This term is also used loosely to refer to the collection of ports or tributaries connected to a physical circuit pack placed in a slot.

Software Backup

The process of saving an image of the current network element's databases, which are contained in its NVM, to a remote location. The remote location could be the WaveStar CIT or an OS.

Software Download

The process of transferring a generic (full or partial) or provisioned database from a remote entity to the target network element's memory. The remote entity may be the WaveStar CIT or an OS. The download procedure uses bulk transfer to move an uninterpreted binary file into the network element.

Software ID

Number that provides the software version information for the system.

Space Diversity (SD)

Reception of the radio signal via mirror effects on earth.

Span

An uninterrupted bidirectional fiber section between two network elements.

Span Growth

A type of growth in which one wavelength is added to all lines before the next wavelength is added.

Squelch Map

This map contains information for each cross-connection in a ring and indicates the source and destination nodes for the low-speed circuit that is part of the cross-connection. This information is used to prevent traffic misconnection in rings with isolated nodes or segments.

Stand Alone Synchronization Equipment (SASE)

A single clock that provides all the DS1 and/or composite clock timing reference to all other clocks in that building.

Standby

The circuit pack is in service but is not providing service functions. It is ready to be used to replace a similar circuit pack either by protection or by duplex switching.

Standby Path

One of two signals entering a constituent path selector, the standby path is the path not currently being selected.

State

The state of a circuit pack indicates whether it is defective or normal (ready for normal use).

Status

The indication of a short-term change in the system.

Subnetwork

A group of interconnected/interrelated Network Elements. The most common connotation is a synchronous network in which the Network Elements have data communications channel (DCC) connectivity.

Supervisor

A user of the application with supervisor user privileges.

Suppression

A process where service-affecting alarms that have been identified as an “effect” are not displayed to a user.

SWIF Module

A SWIF Module is a Switch Interface Switch Center (SWC)
Logical grouping of BSW switch packs, TMG/STRAT3 circuit packs and SWIEX circuit packs in a Switch switching) and two TMG and SWIEX circuit packs.

Synchronization Messaging

Synchronization messaging is used to communicate the quality of network timing, internal timing status, and timing states throughout a subnetwork.

Synchronous

The essential characteristic of time scales or signals such that their corresponding significant instances occur at precisely the same average rate, generally traceable to a single Stratum-1 source.

Synchronous Digital Hierarchy (SDH)

A hierarchical set of digital transport structures, standardized for the transport of suitable adapted payloads over transmission networks.

Synchronous Network

The synchronization of transmission systems with synchronous payloads to a master (network) clock that can be traced to a reference clock.

Synchronous Optical Network (SONET)

The North American standard for the rates and formats that defines optical signals and their constituents.

Synchronous Payload

Payloads that can be derived from a network transmission signal by removing integral numbers of bits from every frame. Therefore, no variable bit-stuffing rate adjustments are required to fit the payload in the transmission signal.

Synchronous Transport Module, Level N (STM-N)

A building block information structure that supports SDH section layer connections, where N represents a multiple of 155.52 Mb/s. Normally N=1, 4, 16, or 64.

System Administrator

A user of the computer system on which the system's OS software application can be installed.

T

T1

A carrier system that transmits at the rate of 1.544 Mb/s (a DS1 signal).

T2

A carrier system that transmits at the rate of 6.312 Mbps (a DS2 signal).

T3

A carrier system that transmits at the rate of 44.736 Mbps (a DS3 signal).

Target Identifier (TID)

A provisionable parameter that is used to identify a particular Network Element within a network. It is a character string of up to 20 characters where the characters are letters, digits, or hyphens (-).

Telcordia Technologies

Telcordia Technologies (formerly Bellcore) is a well-recognized telecommunications' standards organization.

Template

A collection of parameters that define a specific Network Element (NE) configuration. A template gives the user the opportunity to configure parameters in an NE with a single operation. They are re-usable, and allow the user to configure the parameters in many NEs in the same way. A set of default templates is provided, and the user can create new templates and edit or delete user-created ones. Note that a template is always associated with one specific NE type and can not be used for other NE types.

Through (or Continue) Cross-Connection

A cross-connection within a ring, where the input and output tributaries have the same tributary number but are in lines opposite each other.

Threshold-Crossing Alert (TCA)

A message type sent from a Network Element that indicates that a certain performance monitoring parameter has exceeded a specified threshold.

Through Timing

Refers to a network element that derives its transmit timing in the east direction from a received line signal in the east direction and its transmit timing in the west direction from a received line signal in the west direction.

Time Division Multiplexing (TDM)

A technique for transmitting a number of separate data, voice, and/or video signals simultaneously over one communications medium by interleaving a portion of each signal one after another.

Time Slot Assignment (TSA)

A capability that allows any tributary in a ring to be cross-connected to any tributary in any lower-rate, non-ring interface or to the same-numbered tributary in the opposite side of the ring.

Time Slot Interchange (TSI)

The ability of the user to assign cross-connections between any tributaries of any lines within a Network Element. Three types of TSI can be defined: Hairpin TSI, Interring TSI (between rings), and Intraring TSI (within rings).

Transaction Language One (TL1)

A machine-to-machine communications language that is a subset of ITU's human-machine language.

Transmit-Direction

The direction outwards from the Network Element.

Tributary

A path-level unit of bandwidth within a port, or the constituent signal(s) being carried in this unit of bandwidth, for example, an STM-1 tributary within an STM-N port.

Tributary Unit (TU)

An information structure which provides adaptation between the lower order path layer and the higher path layer. Consists of a VC-n plus a tributary unit pointer TU PTR.

Tributary Unit Pointer

Indicates the phase alignment of the VC with respect to the TU in which it resides. The pointer position is fixed with respect to the TU frame.

True Wave™ Optical Fiber

Lucent Technologies' fiber generally called non-zero dispersion-shift fiber, with a controlled amount of chromatic dispersion designed for amplified systems in the 1550/1310 nm range.

Two-Way Point-to-Point Cross-Connection

A two-legged interconnection, that supports two-way transmission, between two and only two tributaries.

Two-Way Roll

The operation which moves a two-way cross-connection between tributary i and tributary j to a two-way cross-connection between the same tributary i and a new tributary k with a single user command.

U

Unavailable Seconds (UAS)

In performance monitoring, the count of seconds in which a signal is declared failed or in which 10 consecutively severely errored seconds (SES) occurred, until the time when 10 consecutive non-SES occur.

Uninterruptible Power Supply (UPS)

Allows connected computer equipment to gracefully shutdown, therefore preventing damage in case of a power fail and to absorb dips in the supplied power.

Universal Coordinated Time (UTC)

A time-zone independent indication of an event. The local time can be calculated from the Universal Coordinated Time.

Upstream

At or towards the source of the considered transmission stream, for example, looking in the opposite direction of transmission.

User Privilege

Permits a user must perform on the computer system on which the system software runs.

User-to-Network Interface (UNI)

The specifications for the procedures and protocols between a user and the Asynchronous Transfer Mode (ATM) network.

V **Value**

A number, text string, or other menu selection associated with a parameter.

Variable

An item of data named by an identifier. Each variable has a type, such as Int or Object, and a scope.

Virtual

Refers to artificial objects created by a computer to help the system control shared resources.

Virtual Circuit

A logical connection through a data communication (for example, X.25) network.

Virtual Container (VC)

Container with path overhead.

Voice Frequency (VF) Circuit

A 64 kilobit per second digitized signal.

Volatile Memory

Type of memory that is lost if electrical power is interrupted.

W **Wait-to-Restore (WTR)**

Applies to revertive switching operation. The protection group enters the WTR state when all Equipment Fail (EF) conditions are cleared, but the system has not yet reverted back to its working line. The protection group remains in the WTR state until the Wait-to-Restore timer completes the WTR time interval.

Wait to Restore Time (WRT)

Corresponds to the time to wait before switching back after a failure has cleared (in a revertive protection scheme). The WRT can be between 0 and 15 minutes, in increments of one minute.

Wander

Long term variations of amplitude frequency components (below 10 Hz) of a digital signal from their ideal position in time possibly resulting in buffer problems at a receiver.

Wavelength Add/Drop (WAD)

The process of adding and dropping wavelengths to provide more efficient transmission.

Wavelength Division Multiplexing (WDM)

A means of increasing the information-carrying capacity of an optical fiber by simultaneously transmitting signals at different wavelengths.

Wavelength Interchange

The ability to change the wavelength associated with an STM-N signal into another wavelength.

WaveStar™ SNMS

WaveStar SubNetwork Management System (formerly known as ITM SNC [Integrated Transport Management SubNetwork Controller]).

Wide Area Network (WAN)

A communication network that uses common-carrier provided lines and covers an extended geographical area.

Wideband Communications

Voice, data, and/or video communication at digital rates from 64 kb/s to 2 Mb/s.

Working

Label attached to a physical entity. In case of revertive switching the working line or unit is the entity that is carrying service under normal operation. In case of nonrevertive switching the label has no particular meaning.

Working State

A working unit that is currently considered active by the system and is carrying traffic in the working state.

X

X.25 Interface/Protocol

The ITU packet-switched interface standard for terminal access that specifies three protocol layers: physical, link, and packet for connection to a packet-switched data network.

X-Terminal

Workstation that can support an X-Windows interface.

X-Windows

Graphical User Interface on Unix Systems.

Z

Zero Code Suppression

A technique used to reduce the number of consecutive zeros in a line-coded signal (B3ZS, B8ZS).