Lucent Technologies
Bell Labs Innovations

WaveStar® TDM 2.5G (OC-48)/ 10G (OC-192) (2-Fiber) Release 6.1.11

Operations Systems Engineering Guide

365-371-549
CC109500447
Issue 1
October 2003

Lucent Technologies - Proprietary
This document contains proprietary information
of Lucent Technologies and is not to be disclosed or used
except in accordance with applicable agreements.

Copyright © 2003 Lucent Technologies
All Rights Reserved

Copyright © 2003 Lucent Technologies
All Rights Reserved

This material is protected by the copyright and trade secret laws of the United States and other countries. It may not be reproduced, distributed, or altered in any fashion by any entity (either internal or external to Lucent Technologies), except in accordance with applicable agreements, contracts or licensing, without the express written consent of Lucent Technologies and the business management owner of the material.

Notice

Every effort has been made to ensure that the information in this document was complete and accurate at the time of production. However, information is subject to change.

Mandatory Customer Information

Federal Communications Commission (FCC) Notification and Repair Information

This equipment is designed to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. Operation of this equipment in a residence is likely to cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

Security

In rare instances, unauthorized individuals make connections to the telecommunications network. In such an event, applicable tariffs require that the customer pay all network charges for traffic. Lucent Technologies and its predecessors cannot be responsible for such charges and will not make any allowance or give any credit for charges that result from unauthorized access.

Trademarks

WaveStar is a trademark of Lucent Technologies, Inc.
Windows, Windows NT, MS-DOS, and Microsoft are registered trademarks of Microsoft Corporation.

Ordering Information

The order number of this document is 365-371-549 (Issue 1).

Support Telephone Numbers

Technical Support Telephone Number

Please contact your Lucent Technologies Local Customer Support Team (LCS) for technical questions about the information in this document.

Information Product Support Telephone Number

To comment on this information product online, go to *http://www.lucent-info.com/comments* or email your comments to *comments@lucent.com*.

We Would Like Your Opinion

We would like your feedback on this document. Your comments can be of great value in helping us improve our documentation. When you have completed this form, please fax it to:

Document Title: ***WaveStar® TDM 2.5G/10G (OC-192), Release 6.1.11***
Operations Systems Engineering Guide

Document Number: *365-371-549, R6.1.11* Publication Date: *October 2003*

Please check the ways you feel we could improve this document:

- ❑ Improve the preface
- ❑ Improve the table of contents
- ❑ Improve the organization
- ❑ Improve the index
- ❑ Include more figures
- ❑ Add more examples
- ❑ Make it more concise/brief
- ❑ Simplify the ordering information
- ❑ Add more detail
- ❑ Make it less technical
- ❑ Add more/better quick reference aids
- ❑ Change fonts
- ❑ Other

Please provide details for the suggested improvement.

Please tell us what aspects of this document are most helpful or appealing to you or write any other comments below:

If we may contact you concerning your comments, please fill out the following:

Name: _____ Telephone Number: _____

Company/Organization: _____ Date: _____

Address: _____

Contents

1 Introduction

Overview 1-2

2 Operations systems interfaces

Overview 2-1
OS Communication: direct OSI connectivity 2-3
OS Communication: IP WAN with gateway NE 2-4
OS communication: X.25/IP/RS-232 access with NCC 2-7
DCN Protocol Stack 2-11
LAN interface details 2-12
OSI DCC interface details 2-13
DCC Protection Mode 2-17
OSI technical specifications 2-19

3 TL1 message details

TL1 Command Input
Input Format 3-13
Parameters 3-14
Input Acknowledgment 3-17
Input Acknowledgment Parameters 3-18

TL1 Command Output
Overview 3-19
Normal response 3-20
Error response 3-22
Autonomous response messages 3-24
ACT-USER: 3-28
ALW-ALM: 3-37
ALW-MSG: 3-39
APPLY: 3-43
CANC-USER: 3-49
CANC-USER-SECU: 3-53
CNVT-CCT: 3-57

CPY-MEM: 3-69
CPY-RFILE: 3-85
DLT-ASAP-PROF: 3-93
DLT-CRS: 3-99
DLT-EQPT 3-105
DLT-IP-MAP: 3-109
DLT-IP-ROUTE: 3-113
DLT-PROTN-GRP: 3-117
DLT-TCA-PROF: 3-123
DLT-ULSDCC-L4: 3-129
DLT-USER-SECU: 3-133
ED-ASAP-PROF: 3-137
ED-CRS: 3-151
ED-DAT: 3-157
ED-EPORT: 3-161
ED-EQPT: 3-167
ED-IP-TUNNEL: 3-173
ED-NE: 3-177
ED-NE-RNES: 3-181
ED-NE-SECU: 3-185
ED-PID: 3-189
ED-PROTN-ACC: 3-195
ED-PROTN-GRP: 3-199
ED-PROTN-TYPE: 3-209
ED-RDL: 3-213
ED-rr: 3-217
ED-STATE-EQPT: 3-239
ED-TCA-PROF: 3-243
ED-USER: 3-255
ED-USER-SECU: 3-259
ED-VCG: 3-265
ED-VCGTRIB: 3-269
ENT-ASAP-PROF: 3-275
ENT-BANNER: 3-283
ENT-CRS: 3-287
ENT-EQPT: 3-303
ENT-FECOM: 3-309
ENT-FECOM-LAN: 3-313
ENT-IP-MAP: 3-319
ENT-IP-ROUTE: 3-323
ENT-PROTN-GRP: 3-327
ENT-ROLL: 3-335
ENT-TCA-PROF: 3-345
ENT-ULS: 3-351
ENT-ULSDCC-L3: 3-355
ENT-ULSDCC-L4: 3-361

ENT-USER-SECU: 3-367
INH-ALM: 3-373
INH-MSG: 3-375
INIT-EQPT: 3-379
INIT-REG: 3-383
INIT-SYS: 3-389
OPR-EXT-CONT: 3-393
OPR-LPBK: 3-397
OPR-PROTNSW: 3-401
OPR-RST-LASER: 3-411
OPR-SYNCNSW: 3-413
REPT ALM: 3-417
REPT ALM ENV: 3-423
REPT DBCHG: 3-427
REPT EVT: 3-431
REPT-EVT-FXR: 3-439
REPT EVT SESSION: 3-443
REPT SW: 3-445
RLS-EXT-CONT: 3-449
RLS-LPBK: 3-453
RLS-PROTNSW: 3-457
RLS-SYNCNSW: 3-463
RMV-EQPT: 3-467
RST-EQPT: 3-471
RTRV-ABN: 3-475
RTRV-ALM: 3-479
RTRV-ALM-ENV: 3-487
RTRV-ALM-NTWK: 3-493
RTRV-AO: 3-497
RTRV-ASAP-ASGNMT: 3-501
RTRV-ASAP-PROF: 3-507
RTRV-ATTR-ALM: 3-519
RTRV-ATTR-CONT: 3-523
RTRV-ATTR-ENV: 3-527
RTRV-ATTR-MSG: 3-531
RTRV-BANNER: 3-535
RTRV-COND: 3-539
RTRV-CRS: 3-545
RTRV-EPM: 3-557
RTRV-EPORT: 3-563
RTRV-EQPT: 3-569
RTRV-EXT-CONT: 3-577
RTRV-FECOM: 3-581
RTRV-FECOM-LAN: 3-587
RTRV-FLT-STATE: 3-591
RTRV-HDR: 3-597

RTRV-IP-MAP: 3-617
RTRV-IP-ROUTE: 3-621
RTRV-IP-TUNNEL: 3-625
RTRV-LOG-ALM: 3-629
RTRV-LOG-NTFCN: 3-633
RTRV-LOG-PROTNSW: 3-637
RTRV-LOG-SECU: 3-641
RTRV-LOG-USER: 3-647
RTRV-LPBK: 3-651
RTRV-MAP-NEIGHBOR: 3-657
RTRV-MAP-NETWORK: 3-663
RTRV-MAP-RING: 3-669
RTRV-MNTC: 3-677
RTRV-NE: 3-683
RTRV-NE-RNES: 3-687
RTRV-NE-SECU: 3-691
RTRV-PM: 3-695
RTRV-PRMTR-DATA: 3-713
RTRV-PRMTR-SFTWR: 3-721
RTRV-PROTN-ACC: 3-729
RTRV-PROTN-GRP: 3-733
RTRV-PROTN-LST: 3-753
RTRV-PROTN-PPG: 3-759
RTRV-PROTN-TYPE: 3-763
RTRV-rr: 3-767
RTRV-STATE-EQPT: 3-793
RTRV-SYNCN: 3-801
RTRV-TCA-ASGNMT: 3-823
RTRV-TCA-PROF: 3-829
RTRV-ULS: 3-841
RTRV-ULSDCC-L3: 3-847
RTRV-ULSDCC-L4: 3-853
RTRV-USER: 3-859
RTRV-USER-SECU: 3-863
RTRV-VCG: 3-869
RTRV-VCGTRIB: 3-875
RTRV-VLAN: 3-885
SET-ATTR-ALM: 3-889
SET-ATTR-CONT: 3-893
SET-ATTR-ENV: 3-897
SET-SID: 3-901
SET-SYNCN: 3-905
TEST-ALM: 3-913
TEST-LED: 3-917

A TL1 parameter tables

Overview A-1
Access identifier (AID) overview A-2
2-Fiber AID parameter tables A-6
2-Fiber PM parameter tables A-25
2-Fiber alarms/events tables with condition description parameters A-36
Protection switching event parameter tables A-55
Password character parameter tables A-63

Abbreviations ABB-1

Glossary GL-1

Index IN-1

About this information product

Purpose

The Operations Systems Engineering Guide (OSEG) provides operations systems (OS) engineering information on the Transaction Language (TL1) commands used in WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) system.

Reason for reissue

This is the first issue of this manual for Release 6.1.11.

Intended Audience

This document is written primarily for network operations planners, facility maintenance center personnel, transmission engineers, and technical support staff. It may be used by anyone who needs

- specific information about the OS interfaces
- information about setting up OS management systems, communications interfaces, or directory services.

Chapter descriptions The table below briefly describes the type of information found in each chapter.

Chapter	Title	Description
Preface	About this information product	describes: • the guide's purpose, intended audience, and organization • references related documentation • explains how to comment on this document
1	Introduction	provides a brief overview of the operations systems interfaces
2	Operations communications interfaces	discusses: • OS Communications over OSI • OSI LAN Interface • OSI DCC Interface • OSI Technical Specifications
3	TL1 message details	provides detailed information on the TL1 messages
Appendix A	TL1 parameter tables	lists the TL1 parameter tables for: • access identifiers (AIDs) • SONET and DS3 performance monitoring (PM) • SONET alarms/events with condition descriptions • SONET protection switching events • password character sets
ABB	Abbreviations and Acronyms	expands common telecommunication abbreviations and acronyms
GL	Glossary	defines SONET telecommunication terms
IN	Index	lists specific subjects and their corresponding page numbers

Related documentation

The Lucent Technologies documents listed in this section provide additional information about WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) system.

The table below lists the documents included in the WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) documentation set.

Document Number	Title
365-371-546	WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) Applications and Planning Guide
365-371-549	WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) Operations Systems Engineering Guide
365-371-548	WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) User Operations Guide
365-371-547	WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) Alarm Messages and Trouble Clearing Guide

Applications and Planning Guide

The ***WaveStar***® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) ***Applications and Planning Guide (APG)*** is created 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 2.5G (OC-48) / 10G (OC-192) (2-Fiber) ***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.

Alarm Messages and Trouble Clearing Guide

The ***WaveStar***® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) ***Alarm Messages and Trouble Clearing Guide*** provides procedures for routine maintenance, troubleshooting, diagnostics, component replacement, and acceptance testing.

Operations Systems Engineering Guide

The ***WaveStar***® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) ***Operations Systems Engineering Guide*** provides detailed information on TL1 commands, messages, and error codes.

Available drawings

The following table list drawings available from the Customer Information Center (CIC). These drawings provide valuable product information.

Drawing number	Title
ED8C789-10	*Typical Bay Arrangement, Ordering Information, Cabling and Floor Plan Data Sheets*
ED8C789-30	*WaveStar TDM 2.5G Shelf Assembly*
ED8C789-31	*WaveStar TDM 10G Shelf Assembly*
ED8C789-32	*WaveStar TDM 2.5G/10G (2-Fiber) Circuit Pack Ordering*
ED8C789-33	*WaveStar TDM 2.5G/10G (2-Fiber) Bay Closing Details*
ED9C280-31	*DS3 Connector Panel (External Mount)*
ED8C789-34	*DS3 Kit [DS3 Connector Panel (Internal Mount and Rear Mount)]*
ED8C789-35	*WaveStar TDM 2.5G/ 10G (2-Fiber) Bay*
	Software Ordering Guide (Release 4 and later)

Technical support services

Lucent Technologies provides the following Technical Support Services:

- Remote Technical Support (RTS) - remote technical support to troubleshoot and resolve system problems.
- On-site Technical Support (OTS) - on-site assistance with operational issues and remedial maintenance.
- Repair and Replacement (R&R) - technical support services for device repair/return or parts replacement.
- Lucent Online Customer Support - online access to information and services that can help resolve technical support requests.

Note: Technical Support Services are available 24 hours a day, 7 days a week.

When additional technical assistance is needed, use the appropriate contact information in the table below.

Customer location	Initial Lucent Technologies contact location
Inside the United States and Canada	Technical Support Services can be reached at **1-866-LUCENT8** (866-582-3688): *Prompt#1*
Outside the United States	Technical Support Services can be reached at **+1-630-224-4672**: *Prompt#2*
Web-Site	For additional information regarding Worldwide Services, refer to the Lucent Technologies' web-site at **http://www.lucent.com/products** • Click on **Browse Catalog** • Click on **Worldwide Services Products** • Select the desired service

How to comment

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

As customer satisfaction is extremely important to Lucent Technologies, every attempt is made to encourage feedback from customers about our information products. Thank you for your feedback.

You can also send or fax comments about this document to:

Lucent Technologies Network Systems GmbH
IP&T
Thurn-und-Taxis-Str. 10
90411 Nuernberg, Germany
Fax: +49 911 526 3545

How to order

This information product can be ordered with the order number 365-371-549 at the Customer Information Center (CIC), see *http://www.cic.lucent.com/*.

□

1 Introduction

Contents

Overview 1-2
Purpose 1-2
TL1 Interface 1-2

Overview

Purpose

This document provides information on the Lucent Technologies WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) Transaction Language (TL1) commands/messages and interface.

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 systems 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 2.5G (OC-48) / 10G (OC-192) (2-Fiber) NEs, for the purposes of sending control information and receiving status and alarm information. OS communication over OSI can occur either:

- directly for OS management of an NE (see Figure 2-1), or
- over non-OSI WANs (see Figure 2-2 through Figure 2-7) with the help of operations communications interfaces supported on an intermediate network entity, which can be either:
  - a Gateway Network Element (GNE), this is the preferred interface of IP based WANs. The WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) NEs can perform the function of a GNE.
  - the Network Communications Controller (NCC), for the cases not supported by the GNE.

NCC options for the 2-Fiber NE

NCC supports OSI LAN for communications towards the WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) NE. The NCC also supports the following protocol conversion options for communications towards the OS:

- X.25
- TCP/IP
- RFC1006++ (Transport Service Bridge)
- RS-232 (with additional hardware)

For more information on these four protocol conversion options see Chapter 2 of the *Network Communications Controller, Operations Systems Engineering Guide.*

Additional information

For information on 2-Fiber TL1 commands/messages, refer to Chapter 3, ***WaveStar***® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) ***TL1 Message Details***.

For information on Directory Services (SDS, TARP) for WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber), refer to Chapter 2 in the *Network Communications Controller, Operations Systems Engineering Guide*.

For information on TL1 commands/messages for the NCC, refer to Chapter 3, ***NCC TL1 Message Details*** in the *Network Communications Controller, Operations Systems Engineering Guide*.

Contents

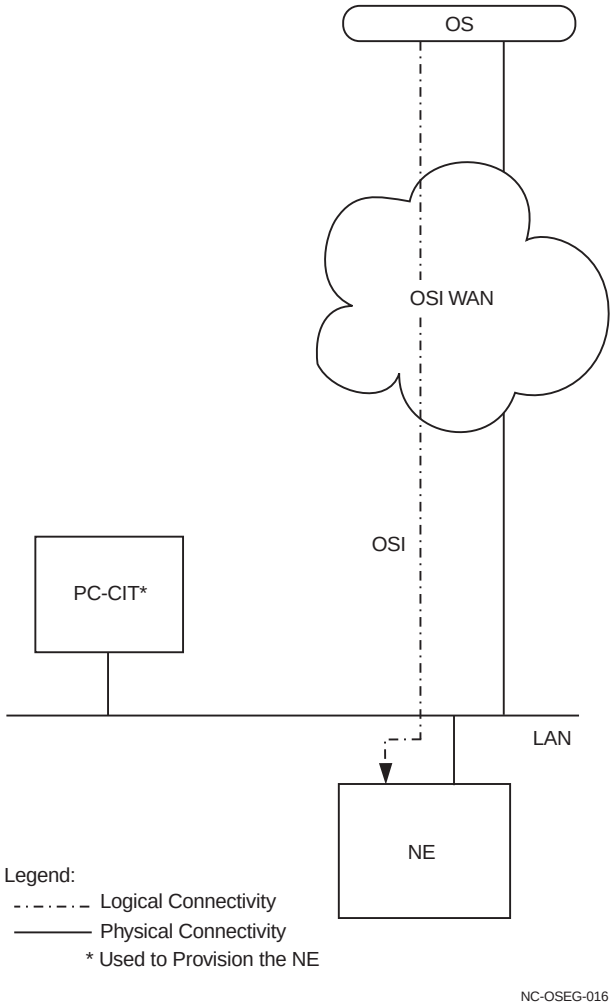
OS Communication: direct OSI connectivity	2-3
OS Communication: IP WAN with gateway NE	2-4
OS communication: X.25/IP/RS-232 access with NCC	2-7
DCN Protocol Stack	2-11
LAN interface details	2-12
OSI DCC interface details	2-13
DCC Protection Mode	2-17
OSI technical specifications	2-19

OS Communication: direct OSI connectivity

OSI WAN/LAN communication between OS and NE

Figure 2-1 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

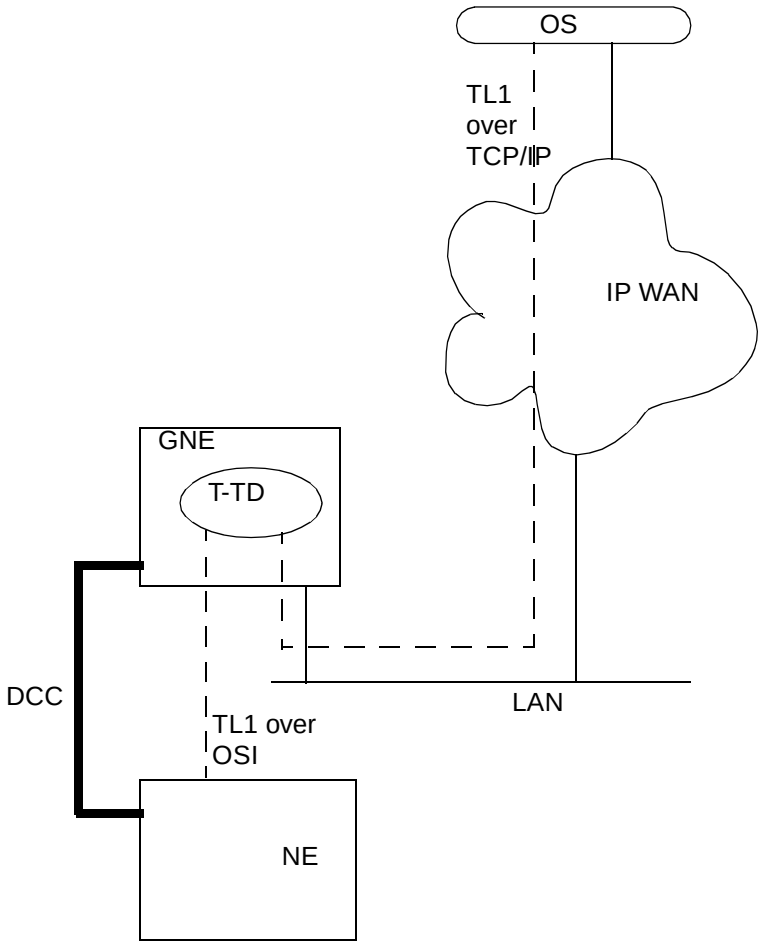


OS Communication: IP WAN with gateway NE

OS communication over IP through the GNE to the NE (TL1)

Figure 2-2 shows the physical and logical connectivity between the OS and NE, with the GNE used as the IP to OSI gateway for TL1. The TCP/IP to OSI gateway allows TCP/IP between the OS and GNE to be the vehicle which allows TL1 commands/messages to flow between the OS and the NE.

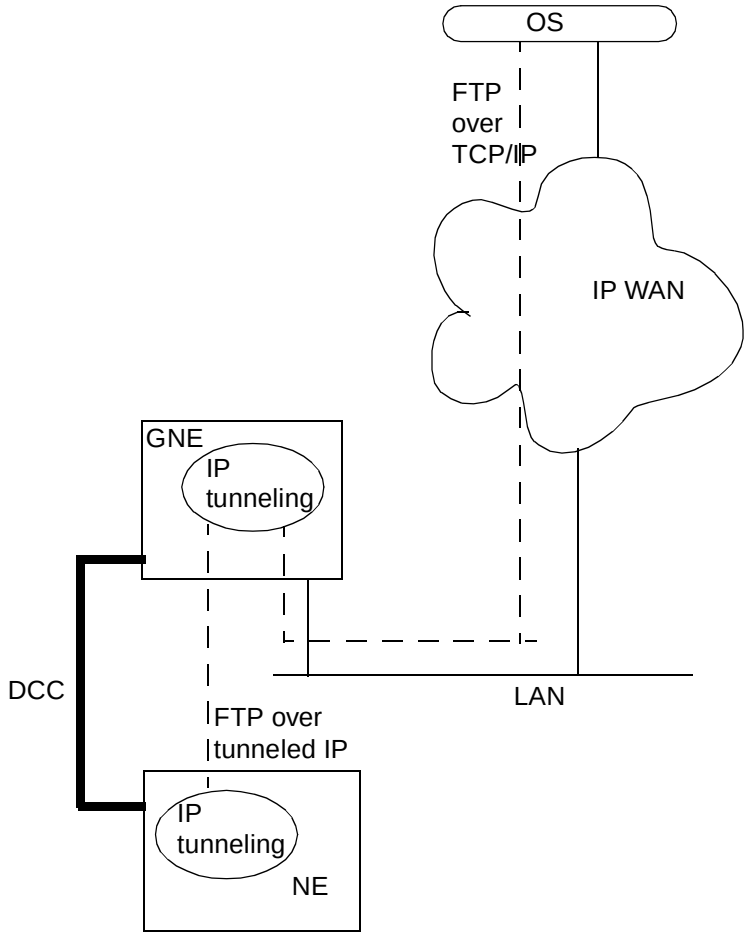
Figure 2-2 OS Communication (TL1) over IP through the GNE to the NE



OS communication over IP through the GNE to the NE (FTP)

Figure 2-3 shows the physical and logical connectivity between the OS and NE, with the GNE used as the IP tunneling gateway for FTP. The IP tunneling gateway allows IP packets used for FTP traffic between the OS and NE to cross the OSI network between the GNE and the NE. This is achieved by encapsulation of the IP packets in OSI packets.

Figure 2-3 OS communication (FTP) over IP through the GNE to the NE

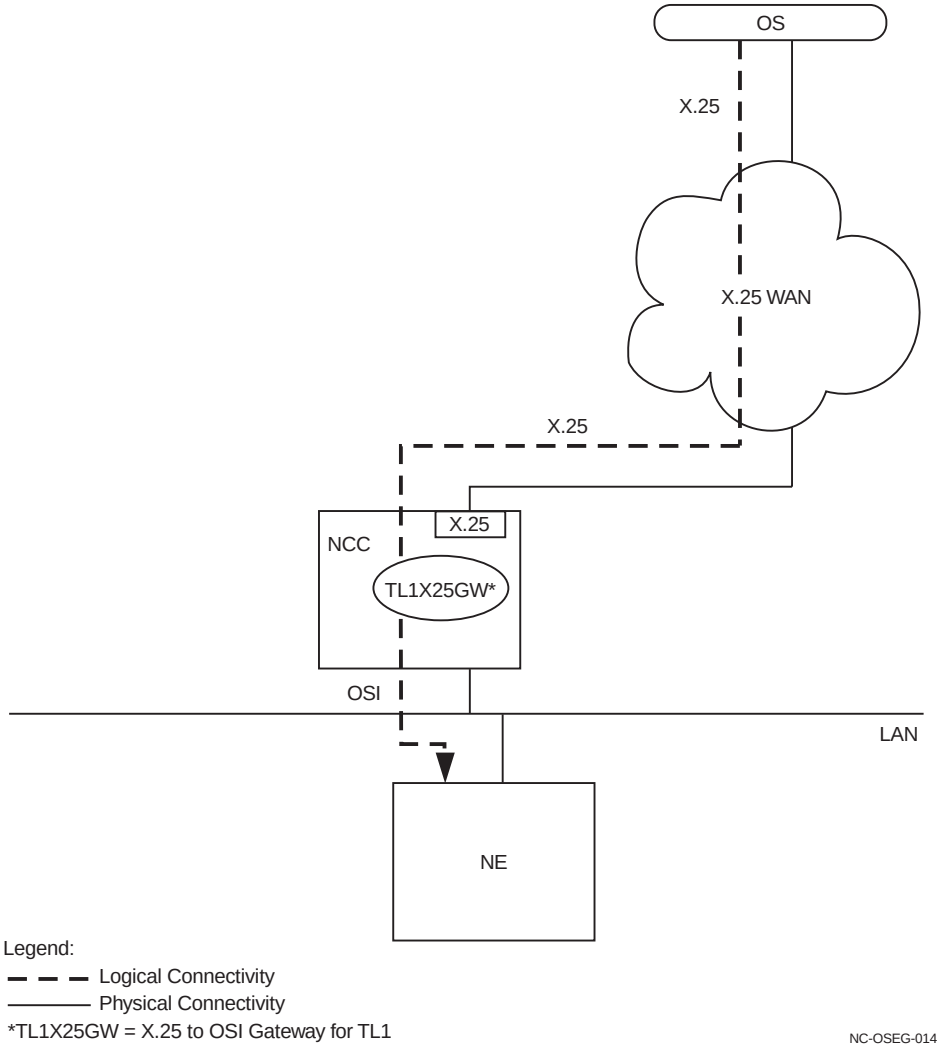


OS communication: X.25/IP/RS-232 access with NCC

OS communication over X.25 through the NCC to the NE

Figure 2-4 shows the physical and logical connectivity between the OS and NE, with the NCC used as the X.25 to OSI gateway for TL1. The X.25 to OSI Gateway allows an X.25 link between the OS and NCC to be the vehicle which allows TL1 commands/messages to flow between the OS and the NE.

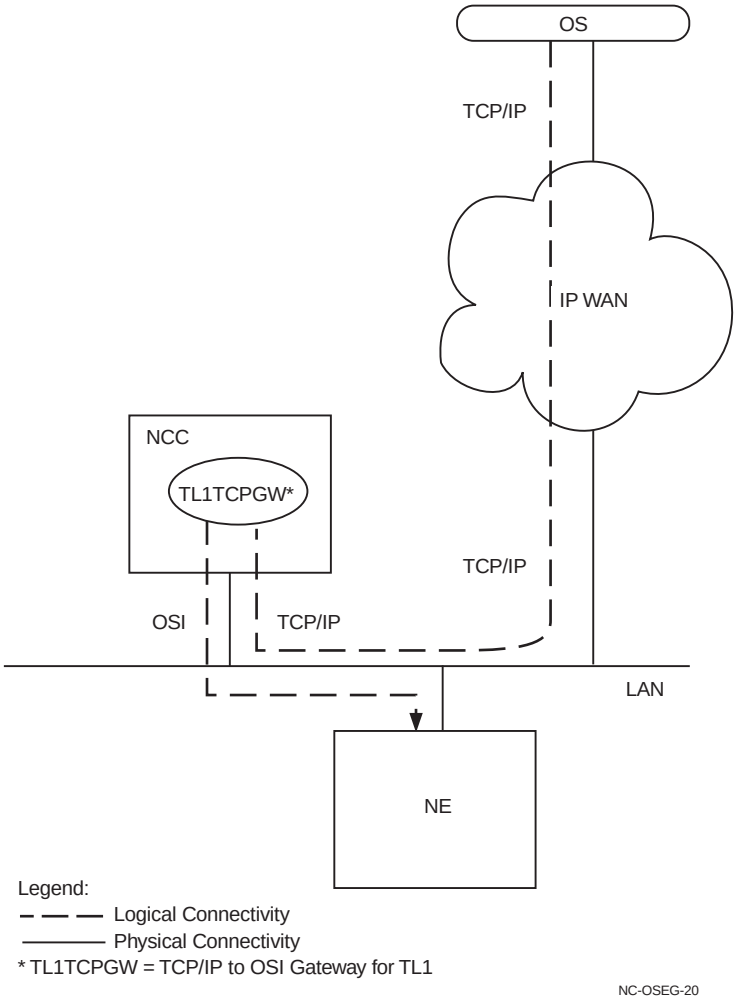
Figure 2-4 OS communication over X.25 through the NCC to the NE



OS communication over TCP/IP through the NCC to the NE

Figure 2-5 shows the physical and logical connectivity between the OS and NE, with the NCC used as the TCP/IP to OSI gateway for TL1. The TCP/IP to OSI gateway allows TCP/IP between the OS and NCC to be the vehicle which allows TL1 commands/messages to flow between the OS and the NE.

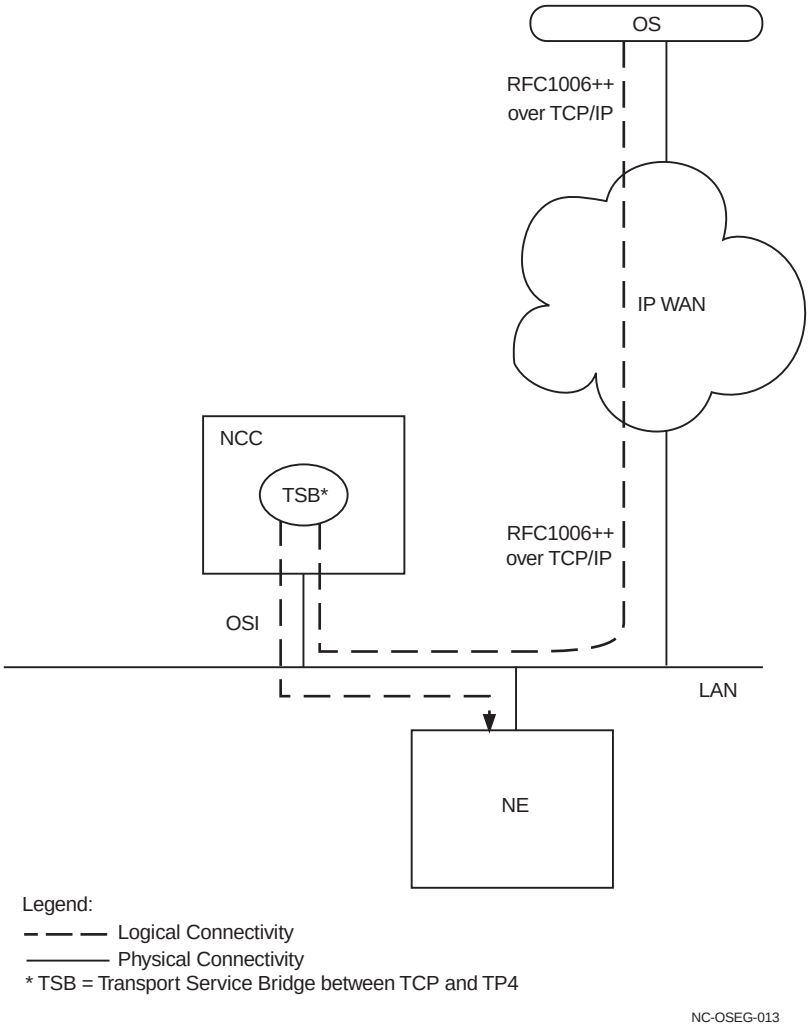
Figure 2-5 OS communication over TCP/IP through the NCC to the NE



OS communication over RFC1006++ through the NCC to the NE

Figure 2-6 shows the physical and logical connectivity between the OS and NE, with the NCC used as the Transport Service Bridge. The Transport Service Bridge on the NCC bridges the TCP transport service on the IP WAN to the OSI TP4 transport service on the LAN.

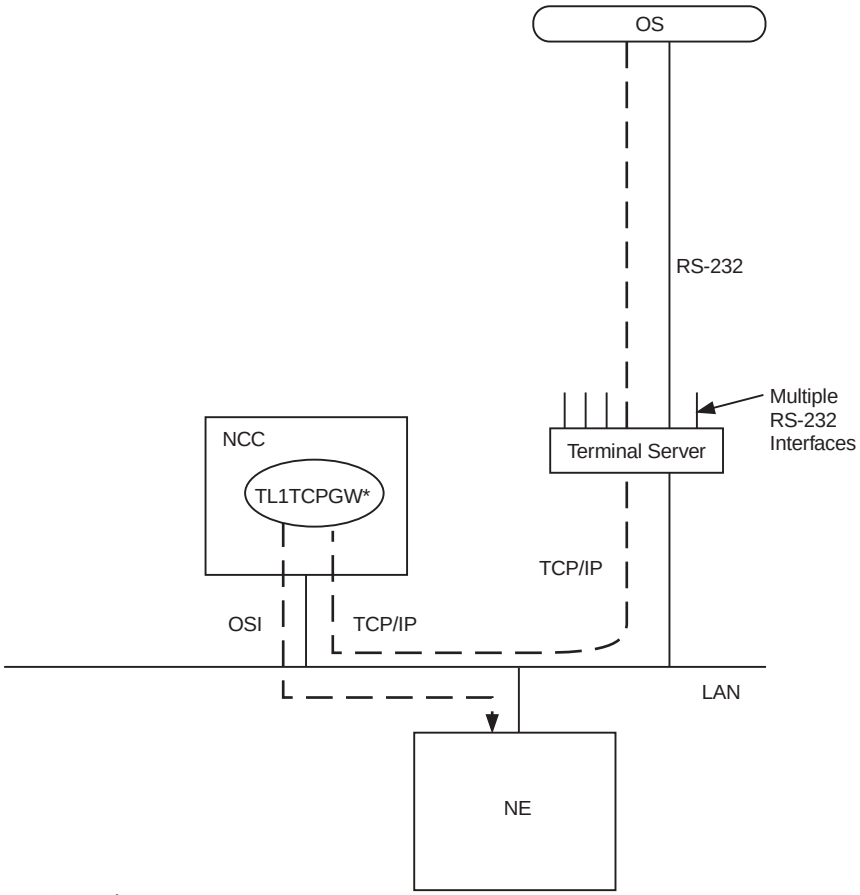
Figure 2-6 OS communication over RFC1006++ through the NCC to the NE



OS communication over RS-232 through the NCC to the NE

The NCC and a terminal server are used to support an RS-232 interface for an OS that uses asynchronous communication. The terminal server multiplexes multiple RS-232s to TCP/IP. The NCC serves as the TCP/IP to OSI Gateway for TL1 when the RS-232 interface is used.
Figure 2-7 shows the physical and logical connectivity between the OS and the NE.

Figure 2-7 OS communication over RS-232 through the NCC to the NE



DCN Protocol Stack

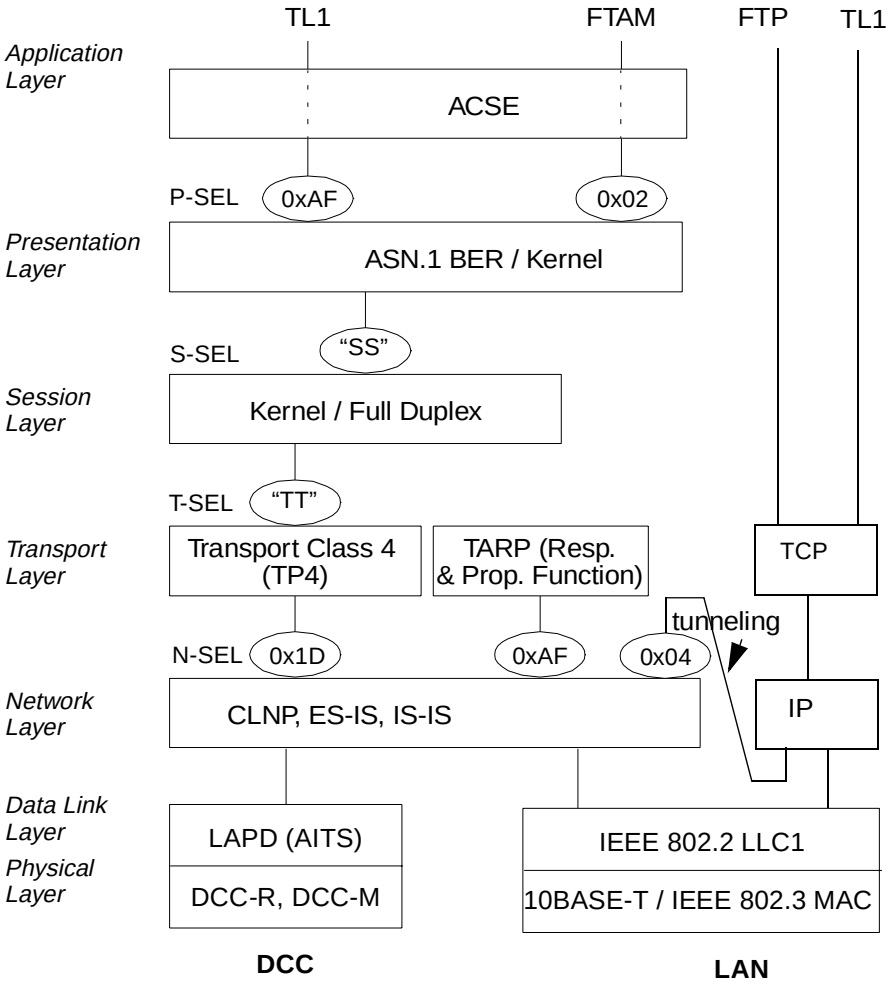
7-layer OSI stack and IP stack

WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) 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) according to the Telcordia Technologies (formerly Bellcore) GR-253 standard. They also support the exchange of management information over a standard IP stack over Local Area Networks (LAN), this to support the GNE functionality.

Protocols and services

WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) network elements support the protocols and services as shown in Figure 2-8.

Figure 2-8 The network element stack profile



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

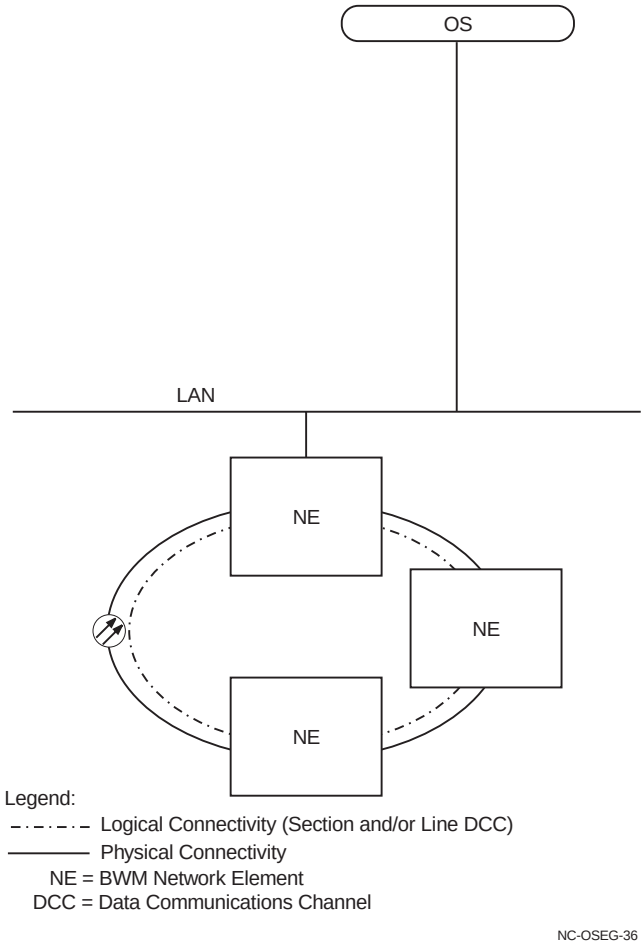
SONET operations communications via DCC

SONET operations communications architectures vary by application and therefore, are dependent upon network topology and NE configurations. As far as the WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) 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 2-9.)

DCC communications interfaces

The following figure shows the two types of DCC communications interfaces of a WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) NE.

Figure 2-9 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*			Payload
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		
8	Data Com D10	Data Com D11	Data Com D12		
9					

DCC line rates

Table 2-3 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 ❍seconds 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 Table 2-4:

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 2.5G (OC-48) / 10G (OC-192) (2-Fiber) NE in a SONET network environment. The value of the DCC Protection Mode parameter determines if a DCC is protected or unprotected. Table 2-5 lists the DCC Protection Mode user-provisionable parameter values.

DCC Protection Mode parameter table

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

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 of enabling 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 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

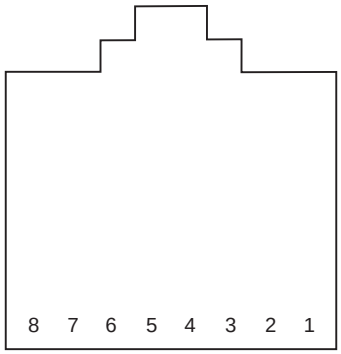
Introduction

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 2.5G (OC-48)/10G (OC-192) to connect to the LAN.

Figure 2-10 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 Data link 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 2.5G (OC-48) / 10G (OC-192) (2-Fiber) can also route SDH management traffic (with variable NSAP lengths). However, WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) 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 × ESCT + 1
IS Holding Timer (ISHT)	2 × 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

TL1 Command Input
Input Format 3-13
Parameters 3-14
Input Acknowledgment 3-17
Input Acknowledgment Parameters 3-18
TL1 Command Output
Overview 3-19
Normal response 3-20
Error response 3-22
Autonomous response messages 3-24
TL1 Messages
ACT-USER: 3-28
ALW-ALM: 3-37
ALW-MSG: 3-39
APPLY: 3-43
CANC-USER: 3-49
CANC-USER-SECU: 3-53
CNVT-CCT: 3-57
CPY-MEM: 3-69
CPY-RFILE: 3-85
DLT-ASAP-PROF: 3-93
DLT-CRS: 3-99
DLT-EQPT 3-105
DLT-IP-MAP: 3-109
DLT-IP-ROUTE: 3-113

DLT-PROTN-GRP: 3-117
DLT-TCA-PROF: 3-123
DLT-ULSDCC-L4: 3-129
DLT-USER-SECU: 3-133
ED-ASAP-PROF: 3-137
ED-CRS: 3-151
ED-DAT: 3-157
ED-EPORT: 3-161
ED-EQPT: 3-167
ED-IP-TUNNEL: 3-173
ED-NE: 3-177
ED-NE-RNES: 3-181
ED-NE-SECU: 3-185
ED-PID: 3-189
ED-PROTN-ACC: 3-195
ED-PROTN-GRP: 3-199
ED-PROTN-TYPE: 3-209
ED-RDL: 3-213
ED-rr: 3-217
ED-STATE-EQPT: 3-239
ED-TCA-PROF: 3-243
ED-USER: 3-255
ED-USER-SECU: 3-259
ED-VCG: 3-265
ED-VCGTRIB: 3-269
ENT-ASAP-PROF: 3-275
ENT-BANNER: 3-283
ENT-CRS: 3-287
ENT-EQPT: 3-303
ENT-FECOM: 3-309
ENT-FECOM-LAN: 3-313
ENT-IP-MAP: 3-319
ENT-IP-ROUTE: 3-323
ENT-PROTN-GRP: 3-327
ENT-ROLL: 3-335
ENT-TCA-PROF: 3-345
ENT-ULS: 3-351
ENT-ULSDCC-L3: 3-355
ENT-ULSDCC-L4: 3-361
ENT-USER-SECU: 3-367

INH-ALM: 3-373
INH-MSG: 3-375
INIT-EQPT: 3-379
INIT-REG: 3-383
INIT-SYS: 3-389
OPR-EXT-CONT: 3-393
OPR-LPBK: 3-397
OPR-PROTNSW: 3-401
OPR-RST-LASER: 3-411
OPR-SYNCNSW: 3-413
REPT ALM: 3-417
REPT ALM ENV: 3-423
REPT DBCHG: 3-427
REPT EVT: 3-431
REPT-EVT-FXR: 3-439
REPT EVT SESSION: 3-443
REPT SW: 3-445
RLS-EXT-CONT: 3-449
RLS-LPBK: 3-453
RLS-PROTNSW: 3-457
RLS-SYNCNSW: 3-463
RMV-EQPT: 3-467
RST-EQPT: 3-471
RTRV-ABN: 3-475
RTRV-ALM: 3-479
RTRV-ALM-ENV: 3-487
RTRV-ALM-NTWK: 3-493
RTRV-AO: 3-497
RTRV-ASAP-ASGNMT: 3-501
RTRV-ASAP-PROF: 3-507
RTRV-ATTR-ALM: 3-519
RTRV-ATTR-CONT: 3-523
RTRV-ATTR-ENV: 3-527
RTRV-ATTR-MSG: 3-531
RTRV-BANNER: 3-535
RTRV-COND: 3-539
RTRV-CRS: 3-545
RTRV-EPM: 3-557
RTRV-EPORT: 3-563
RTRV-EQPT: 3-569

RTRV-EXT-CONT: 3-577
RTRV-FECOM: 3-581
RTRV-FECOM-LAN: 3-587
RTRV-FLT-STATE: 3-591
RTRV-HDR: 3-597
RTRV-IP-MAP: 3-617
RTRV-IP-ROUTE: 3-621
RTRV-IP-TUNNEL: 3-625
RTRV-LOG-ALM: 3-629
RTRV-LOG-NTFCN: 3-633
RTRV-LOG-PROTNSW: 3-637
RTRV-LOG-SECU: 3-641
RTRV-LOG-USER: 3-647
RTRV-LPBK: 3-651
RTRV-MAP-NEIGHBOR: 3-657
RTRV-MAP-NETWORK: 3-663
RTRV-MAP-RING: 3-669
RTRV-MNTC: 3-677
RTRV-NE: 3-683
RTRV-NE-RNES: 3-687
RTRV-NE-SECU: 3-691
RTRV-PM: 3-695
RTRV-PRMTR-DATA: 3-713
RTRV-PRMTR-SFTWR: 3-721
RTRV-PROTN-ACC: 3-729
RTRV-PROTN-GRP: 3-733
RTRV-PROTN-LST: 3-753
RTRV-PROTN-PPG: 3-759
RTRV-PROTN-TYPE: 3-763
RTRV-rr: 3-767
RTRV-STATE-EQPT: 3-793
RTRV-SYNCN: 3-801
RTRV-TCA-ASGNMT: 3-823
RTRV-TCA-PROF: 3-829
RTRV-ULS: 3-841
RTRV-ULSDCC-L3: 3-847
RTRV-ULSDCC-L4: 3-853
RTRV-USER: 3-859
RTRV-USER-SECU: 3-863
RTRV-VCG: 3-869

RTRV-VCGTRIB: 3-875
RTRV-VLAN: 3-885
SET-ATTR-ALM: 3-889
SET-ATTR-CONT: 3-893
SET-ATTR-ENV: 3-897
SET-SID: 3-901
SET-SYNCN: 3-905
TEST-ALM: 3-913
TEST-LED: 3-917

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

TL1 command abortability not supported

Currently, abortability for TL1 commands is not supported. In the future some TL1 commands will be abortable, however, not in this release.

TL1 command user entries

TL1 command user input, which must be typed exactly as shown, are printed in bold type.The responses are printed in `typewriter` font. Descriptive names of user entry values are shown in *italic* type. Items enclosed in brackets "[ ]" indicate optional parameters.

Input parameter names and values

This document presents input parameter names in *italic*, **bold**, lowercase characters. Input parameter values are shown as **bold**, UPPERCASE characters.

Output parameter names and values

This document shows output parameter names in *italic*, lowercase characters. Output parameter values are UPPERCASE.

Command function categories

Commands are separated by five command function categories (FC):

- M - Maintenance
- P - Provisioning
- PM - Performance Management
- S - Security and System Administration

- T - Test Access

User authorization levels

Each command has been assigned a user authorization level (AL) to verify the user's login ID authorization level. Five user authorization levels for each function category, based upon login ID, are provided to control which Network Element functions a particular user may perform:

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

Users may execute any commands on their function category authorization level, as well as all commands at levels lower than theirs.

Example

For example, a user with authorization level 4 in Security Management function category (S4), can execute commands listed in levels 4, 3, 2, and 1 in the Security Management function category.

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-IP-MAP	S3
DLT-IP-ROUTE	S3
DLT-PROTN-GRP	M4
DLT-TCA-PROF	PM3
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-IP-TUNNEL	S3
ED-NE	S3
ED-NE-SECU	S4
ED-PID	S1
ED-PROTN-ACC	M4
ED-PROTN-GRP	M4

TL1 Message	Privilege
ED-PROTN-TYPE	M4
ED-rr	P3
ED-STATE-EQPT	M4
ED-TCA-PROF	PM3
ED-USER	S1
ED-USER-SECU	S5
ED-VCG	P3
ED-VCGTRIB	P3
ENT-ASAP-PROF	M3
ENT-CRS	P3
ENT-EQPT	P3
ENT-FECOM	S3
ENT-FECOM-LAN	S4
ENT-IP-MAP	S3
ENT-IP-ROUTE	S3
ENT-PROTN-GRP	M4
ENT-ROLL	P3
ENT-TCA-PROF	PM3
ENT-ULSDCC-L3	S4
ENT-ULSDCC-L4	S4
ENT-ULS	S4
ENT-USER-SECU	S5
INH-ALM	M3
INH-MSG	M3
INIT-EQPT	M4
INIT-REG	PM3
INIT-SYS	S4
OPR-EXT-CONT	M3
OPR-LPBK	T4
OPR-PROTNSW	M4

TL1 Message	Privilege
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
RLS-PROTNSW	M4
RLS-SYNCNSW	M4
RMV-EQPT	M4
RST-EQPT	M4
RTRV-ABN	M1
RTRV-ALM	M1
RTRV-ALM-ENV	M1
RTRV-ALM-NWTK	M1
RTRV-AO	S1
RTRV-ASAP-ASGNMT	M1
RTRV-ASAP-PROF	M1
RTRV-ATTR-ALM	M1
RTRV-ATTR-CONT	M1
RTRV-ATTR-ENV	M1
RTRV-ATTR-MSG	M1
RTRV-BANNER	S1
RTRV-COND	M1
RTRV-CRS	P1
RTRV-EPM	PM1
RTRV-EPORT	P1
RTRV-EQPT	P1

TL1 Message	Privilege
RTRV-EXT-CONT	M1
RTRV-FECOM	M1
RTRV-FECOM-LAN	S1
RTRV-FLT-STATE	M1
RTRV-HDR	S1,T1,M1,P1,PM1
RTRV-IP-MAP	S1
RTRV-IP-ROUTE	S1
RTRV-IP-TUNNEL	S1
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	S1
RTRV-NE-SECU	S1
RTRV-OW	M1
RTRV-PM	PM1
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

TL1 Message	Privilege
RTRV-STATE-EQPT	M1
RTRV-SYNCN	P1
RTRV-TCA-ASSGNMT	PM1
RTRV-TCA-PROF	PM1
RTRV-ULSDCC-L3	S1
RTRV-ULSDCC-L4	S1
RTRV-ULS	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-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 (3-7).*

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, 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 ≤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 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): Any

Beginning with Release 4.0, 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 2. 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). Passwords 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. Values: 6 to 10 legal characters. Valid passwords consist of at least two non-alphabetic characters with at least one special character. The special character can be one of the required non-alpha characters. For example, **TEST1+** is a valid password. The special characters are "#", "%", and "+". The first character of a password must be a letter. Starting with Release 2.0, the special characters are defined in OSEG Appendix A.

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 4.0.1, 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.
   */
;
```

Starting with Release 6.0 the login banner is provisionable. See **ENT-BANNER** and **RTRV-BANNER.** The banner shown here is the default banner.

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 6.0, 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 (Sheet 1 of 2)

Parameter Name	Description
uid	User Identifier. This parameter is available starting in Release 2. 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 2. 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 2. 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 2. 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 4.0, 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 2. This specifies the type of system. Values: WaveStar_2.5G_10G, WaveStar_BandWidth_Manager, Network_Communication_Controller, WaveStar_10G_STM64 WaveStar_4F192

Table 3-2. ACT-USER Output Parameters (Sheet 2 of 2)

Parameter Name	Description
release	This parameter is available starting in Release 2. 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 4.0.1. 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 4. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

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

Starting in Release 5.1, the syntax is:

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

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 **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-AO

RTRV-ATTR-MSG

NAME

APPLY: Install New Software Generic

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 4.0, 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

Starting in Release 1.0, if **APPLY** specifies an immediate installation, then the COMPLD response is as shown below:

```
   sid date time
M  ctag COMPLD
   /* New software generic installation in progress */
;
```

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.

When the **APPLY** command is used for an immediate installation, then the command will not report COMPLD immediately, but as late in the installation procedure as possible. At some stage of installation, probably around system reset, communications will fail. The command will indicate completion before that occurs.

The number of files transferred during the installation process will be minimized.

- If a file in NVM is the same as the corresponding working file, then it will not be copied from NVM to working memory.

- If the code pertaining to a specific type of circuit pack has not been affected by the copy of files from NVM to working memory, then those circuit packs should not receive new programs and they should not be reset as part of the installation process.

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: Cancel User

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): Any

Beginning with Release 4.0, the user privilege code is
User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

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

Beginning in Release 4.0, 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 3-7. 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 4. 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

CANC-USER-SECU: Cancel User Security

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-8. 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 3-8. 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

CNVT-CCT: Convert Cross-Connect Topology

This command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 5.0, 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.

For a Path-Protected to a 1-way Point-to-Point conversion, the working leg of the existing path-protected cross connection is converted to a point-to-point cross-connection leg by removing the protection leg of the path-protected cross connection.

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

Table 3-9. CNVT-CCT Parameter Details

Conversion (occt -> 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: ■ **STS1** ■ **STS3** ■ **STS12** ■ **STS48**
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 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:

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

Parameter Name	Description
	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 **Equipage, Red-Lined Circuit** error response is shown below:

```
   sid date time
M  ctag DENY
   ERLC
   /* Equipage, Red-Lined Circuit */
;
```

The following condition will cause an SNVS error response:

- Attempt to modify a red-lined cross 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3)

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 3)

Parameter Name	Description
	■ "**FTTD**,***psel***,***ssel***,***tsel***,***nsap***" (starting in Release 5.1.5). File Transfer Translation Device. If the connection to the NE is through a TCP/IP Gateway, the ***from*** parameter shall be set to "**FTTD**,***psel***,***ssel***,***tsel***,***nsap***". FTTD implies that part of the path uses OSI and part uses FTP (TCP/IP). The gateway's NSAP is used for ***psel*** etc. The CIT/EMS URL is used for the *src* parameter. Details about the FTP (URL) format are given later in the text. The FTTD identifier is for informational purposes only. For example, EMS could be used instead - the values of *psel*, etc. are what determine the location of the file. No matter what is used for the identifier (FTTD, EMS, etc.), if the connection is through an TCP/IP gateway and the file is located on an FTP file server, then the *src* parameter must be of the FTP (URL) format. ■ "**FTP**" (starting in Release 5.0). 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**. It is also omitted if ***to*** is **SEC**.
class	Specifies the class of the copy. Values: ■ **DOWNLOAD** Download the program. ■ **BACKUP** Copy the database to a backup location.

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

Parameter Name	Description
	■ **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): AFI(1), IDI(1), 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.

The parameters ***tsel***, ***ssel*** and **psel** are described in GR253 sections 8.3.4, 8.3.5 and 8.3.6, where it is chosen for the letter t=0x54 for ***tsel*** and the letter s=0x53 for ***ssel***. For FTAM connections, all cases used in the command that use ***psel***, the value for ***psel***=0x02. The last byte of the NSAP is called the N-SEL byte. The use of the N-SEL byte is described in GR-253 section 8.3.3 where it is set to be a fixed value of 0x1d.

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:

- <backups\TID\Release\Date> (DOS example 1)
- <generics\WaveStar_2.5G_10G\Release\p> (DOS example 2)
- <//ems/obr_root/Data/W2_5G/TID> (UNIX example 1)
- <//ems/sw/data/W2_5G_10G/TID> (UNIX example 2).

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.

To use the FTP to NE for file transfers (when the ***from*** / ***to*** parameter is equal to **FTP**), the *src / dst* directory must be in the FTP file format (URL):

ftp://[<login>[:<password>]@]<host>[:<port>]/<file name>.

- <login> - Default value: "anonymous“
- <password> - Default for login:anonymous is “” (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages.
- <host> - The <host> portion is an internet address of the form a.b.c.d, with a, b, c and d in the range 0…255, optionally followed by a port number.
- <port> - This is the port # of the FTP Server, given when deviating from the standard port # 21.
- <file name> - The complete path name of the file.

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 5.0, 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 5.0, 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 5.0, 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 5.0, 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,02,04,02,39840F8000000000000000000008006A1978450",
"/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,02,5353,5454,39840F8000000000000000000008007659A8451",
"/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. The NSAP address used in the **CPY-MEM** command is the address of the FTP to FTAM Gateway. There are the following assumptions:

- GNE has NSAP of 601D0C0C801d
- FTP server has IP address of 193.13.52.229
- FTP user is LUC01
- FTP password is ********
- Software is on PC under C:Program Files\Lucent Technologies\WaveStar CIT\generics\WaveStar_2.5G_10G\06.01.05\p

```
CPY-MEM:tid::20::
"FTTD,02,5353,5454,39840F800000000000000000000601D0C0C801D",
"ftp://LUC01:********@193.13.52.229/generics\\WaveStar_2.5G_10G\\
06.01.05\\p","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:tid::20::
"FTTD,02,5353,5454,39840F800000000000000000000601D0C0C801D",
"ftp://193.13.52.229","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. There are the following assumptions:
- GNE has NSAP of 601D0C0C801d
- FTP server has IP address of 193.13.52.229
- FTP user is LUC01
- FTP password is ********
- Backup path is on PC under D:Program File\Lucent Technologies\WaveStar CIT\backups\TID\06.01.05\03152002

```
CPY-MEM:tid::ctag::"PRI",,"FTTD,02,5353,5454,39840F8000000000000000000
00601D0C0C801D","ftp://LUC01:********@193.13.52.229/backups\\TID\\
06.01.05\\03152002",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,01,01,03,39840F8000000000000000000008006A
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
- NE serial number mismatch on a restore.

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

ED-NE

INIT-SYS

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

NAME

CPY-RFILE: Copy software generic to NE

This command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.1.11

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

2.

INPUT FORMAT

CPY-RFILE:*tid*::*ctag*:::*spec_block*

DESCRIPTION

This command can be used to download software generics. The DOWNLOAD option of **CPY-RFILE** is used to download new generics which are stored in the previous region of NVM. A directory or URL shall be specified for the source (see **srcurl** parameter).

When the **CPY-RFILE** command is received by the NE, a confirmation or rejection must be returned immediately. The NE must ensure it recognizes the file/s it will be downloading and, when applicable, that there is enough space to store, uncompress, and install the file/s. So, the initial response will indicate the NEs imminent actions.

As an FTP client, the NE will use the information included in the TL1 command to establish an FTP session with Transport Element Activation Manager, being the FTP server.

Installation via APPLY causes the contents of previous NVM to be installed. Following installation, a "pointer" is changed so that what is identified as current NVM contains the currently executing generic and previous NVM contains the previous generic.

File transfer requires a checksum

A file that is transferred via the **CPY-RFILE** command should contain one or more checksums to help validate that the file has not been corrupted.

File transfer applications

The actual file transfer can use the following file transfer applications:

- FTAM
- FTP
- FT-TD (file transfer translation device).

NOTE: The support of a certain file transfer application is release specific and additionally dependent on the network configuration (e.g. when one GNE is configured to be a FT-TD, FT-TD can be used for file transfers to/from remote NEs).

INPUT PARAMETERS

Table 3-15. `CPY-RFILE` Input Parameters

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.
spec_block	The following are the ***spec_block*** parameters.

Table 3-16. `CPY-RFILE` Input *spec_block* Parameters

Parameter Name	Description
type	Specifies the type and direction of the file transfer: ■ **SWDL**: SW Download ■ **RFR**: Remote File Restore, restore the database from a backup location (not supported yet) ■ **RFBU**: Remote File Backup, copy the database to a backup location (not supported yet) *Type*: alphanumeric value set *Range*: SWDL

Table 3-16. `CPY-RFILE` Input *spec_block* Parameters

Parameter Name	Description
src	*src* is the source where the database (*xfertype*=RFR) or software (*xfertype*=SWDL) is being transferred from. It is omitted if xfertype=RFBU. *Type*: text string *Range*: 1 to 128 characters, format is a FTP URL or FTAM URL address on the system (EMS or CIT) from which the file is transferred. The FTP URL must be in the format: ftp://[<login>[:<password>]@]<host>[:<port>]/<path_name> ■ <login>: default value: "anonymous" ■ <password>: default for <login> "anonymous" is "" (empty). For security reasons, the <password> portion of the FTP file format must be masked prior to generating any autonomous messages. ■ <host>: the <host> portion is an internet address of the form a.b.c.d with a, b, c and d in the range of 0...255. ■ <port>: this is the port number of the FTP server, given when deviating from the standard port number 21. ■ <path_name>: The complete path name, where the files are located. The FTAM URL must be in the format: ftam://[<nsap_address>/<path_name> ■ <nsap_address>: network service access point address of the host, which consists of 20 bytes (40 hex characters) ■ <path_name>: The complete path name, where the files are located. Example of a valid path name: "/bwm/generic/01_02_15", "C:\\Program Files\\Lucent Technologies\\WaveStar"
dest	*dest* is the destination where the database is being transferred to. It is omitted if *xfertype*=SWDL. See parameter *src*. Those requirements also apply to the parameter *dest*.
ovwrt	Indicates whether or not the files should overwrite an existing file located at the destination. *Type*: alphanumeric value set *Range*: YES (default), overwrite existing file of same directory location and filename NO, do not overwrite file, fail the file transfer if file already exists.

Table 3-16. CPY-RFILE Input *spec_block* Parameters

Parameter Name	Description
fttd	Specifies the file transfer translation device (FTTD). *Type*: text string *Range*: 1 to 128 characters, format is a FTTD gateway address. The FTTD address must be in the format: fttd://<nsap_address> ■ <nsap_address>: network service access point address of the host, which consists of 20 bytes (40 hex characters). There can only be an even number of hex characters since they are generated from bytes and each byte corresponds to 2 hex characters.

OUTPUT FORMAT

The NE sends the following normal completion response just prior to initiating the requested file transfer:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following examples show input and output of **CPY-RFILE** commands: The following example shows a **CPY-RFILE** request that downloads a new generic from the manager to NVM of the NE by FTP with the help of a FTTP device. To cause program to execute, the **APPLY** command must be used.

```
CPY-RFILE:LT-WBM::123456:::TYPE=SWDL,
SRC="ftp://username:pwd123@128.218.128.281:21/vender/model/release1",
FTTD="fttd://39840F8000000000000000000000601D0D50E01d",
OVWRT=YES;

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

The following example shows a **CPY-RFILE** request that downloads a new generic from the manager to NVM of the NE by FTAM. To cause program to execute, the **APPLY** command must be used.

```
CPY-RFILE:LT-WBM::123456:::TYPE=SWDL,
SRC="ftam://39840F8000000000000000000000010a4fabc861d/
C:\\Program Files\\Lucent Technologies\\WaveStar CIT\\
generics\\susi030042",OVWRT=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 **CPY-RFILE** command. Additional error responses that specifically apply to this command are defined in the following:

Validation rule: Input parameters not specified

If any one or more of the input parameter values are not valid, the system responds with:

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

Validation rule: Insufficient file space

If the command failed due to insufficient file space, the system responds with:

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

Validation rule: Product mismatch

If the command failed due to a product mismatch in a retrieved file (file does not belong to NE type), the system responds with:

```
   sid date time
M  ctag DENY
   SRAC
   /*Status,RequestedAccessConfigurationinvalid,retrievedfileNEmismatch*/
;
```

Validation rule: Temporary exhaustion of resources

If the system is experiencing temporary exhaustion of allocated resources because

- all resources are busy or
- a **CPY-MEM** request is issued and a previous **CPY-MEM** has not finished or a resource is busy for other reasons,

the system responds with:

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

Validation rule: Directory/URL not specified

If **CPY-RFILE** specifies a SWDL and no directory/URL is specified by *src*, then the following error response is given:

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

Validation rule: FT-TD device not specified

If **CPY-RFILE** used FTP for SWDL no FT-TD device (nsap) is specified by *fttd*, then the following error response is given:

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

Validation rule: Additional directory/URL specified

If **CPY-RFILE** specifies a SWDL and *dst* is not empty:

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

RELATED TL1 MESSAGES

APPLY

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

RTRV-NE

ED-NE

NAME

DLT-ASAP-PROF: Delete Alarm Severity Assignment Profile

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-17. 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 ■ **DS3IN** DS3 Port (input) ■ **DS3OUT** DS3 Port (output), connected to a SONET port ■ **ENET** Ethernet ■ **ENV** Environmental (Miscellaneous Discrete) (starting in a future release). ■ **EQPT** Equipment ■ **PT** Path terminating, SONET ■ **PTSDH** Path terminating, SDH ■ **SONET** OC-N/EC1 Port ■ **TIMING** System Timing ■ **TRIBSONET** STS-N(c) SONET 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 OC-3 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

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

Starting with Release 5, 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.

Deleting a cross connection that is in red-line condition is not allowed. The **ED-RDL** command must first be used to remove the red-line condition.

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 3-18. 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: ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)
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 5.0, 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 5.0, 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 3-18. DLT-CRS Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	Starting with Release 4.0, this parameter can also have the value(s): ■ **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 STS1 cross connection existing between the tributaries shown in the AID field.

```
DLT-CRS-STS1: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.

The **Equipage, Red-Lined Circuit** error response is shown below:

```
   sid date time
M  ctag DENY
   ERLC
   /* Equipage, Red-Lined Circuit */
;
```

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

- Attempt to delete a red-lined cross 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-19. 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

RMV-EQPT

RST-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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5

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 3-20. 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 3-21. `DLT-IP-MAP` Input *spec_block* Parameters

Parameter Name	Description
ip	This parameter is available starting in Release 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-22. 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 3-23. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

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.

A protection group can only be deleted if there are no existing cross connections on any port in the protection group.

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

INPUT PARAMETERS

Table 3-24. 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 3-24. `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 2)
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 2)
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 2) Starting in Release 5.0, 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). Starting in Release 6.1.5, the value can only 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 5.0, the Default0 profile will be changed to NotReported.

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

INPUT PARAMETERS

Table 3-25. 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 3-25. 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: ■ **DS3** ■ **ENET** ■ **PATH** ■ **PHYSICAL** ■ **SECTION-LINE**.
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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-26. 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 2. 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 3-26. DLT-ULSDCC-L4 Input Parameters (Sheet 2 of 2)

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

Table 3-27. DLT-ULSDCC-L4 Input *spec_block* Parameters

Parameter Name	Description
l4ajsys	This parameter is available starting in Release 2. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-28. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-29. 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 3-29. 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 3) ■ **DS3IN** DS3 Port (input) ■ **DS3OUT** DS3 Port (output), connected to a SONET port ■ **ENET** Ethernet (starting in Release 5) ■ **ENV** Environmental (Miscellaneous Discrete) (starting in Release 5.) ■ **EQPT** Equipment ■ **PT** Path terminating, SONET (starting in Release 5) ■ **PTSDH** Path terminating, SDH (starting in Release 5) ■ **SONET** OC-N/EC1 Port ■ **SYS** System Events ■ **TIMING** System Timing ■ **TRIBSONET** STS-N(c) SONET 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.

Table 3-29. ED-ASAP-PROF Input Parameters (Sheet 3 of 9)

Parameter Name	Description			
	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**. 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 3, 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 3) 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**

Table 3-29. ED-ASAP-PROF Input Parameters (Sheet 4 of 9)

Parameter Name	Description			
	ropn	Ring Open	*	**MJ**
	nidm	Node ID Mismatch	*	**MJ**
	dprn	Duplicate Ring Node	*	**MJ**
	urt	Unknown Ring Type (starting in Release 3)	*	**NA**
	irpm	Inconsistent Ring Prot Mode (starting in Release 3)	*	**MJ**
	cable	E/W Cable Error (starting in Release 3)	*	**MJ**
	rdip	Ring Discovery in Progress	*	**NA**
	rsip	Ring Startup in Progress	*	**MJ**
	nut_nopr	Local NUT Not Operational (starting in Release 6)	*	**MN**
	nut_inxcgrn	NUT Inconsistent XC Granularity (starting in Release 6)	*	**MJ**
	nut_dsbld	NUT Disabled (starting in Release 6)	*	**MN**
	nut_tmpprv	Temporary NUT Provisioned (starting in Release 6)	*	**NR**
	etp	Extra Traffic Preempted	*	**NA**
	rpss	Ring Prot Switching Suspended (starting in Release 3)	*	**MJ**
DRIPATH				
	psact	Path Switch Active	*	**NR**
	psfail	Path Switch Failure	*	**NA**
	psinh	Path Switch Inhibited	*	**NA**
DS3IN			*	
	sa_ds3los ***nsa_ds3los***	service/nonservice-affecting DS3 Loss of Signal	*	**CR** **MN**
	sa_ds3lof ***nsa_ds3lof***	DS3 Loss of Frame	*	**CR** **MN**

Table 3-29. ED-ASAP-PROF Input Parameters (Sheet 5 of 9)

Parameter Name	Description			
	sa_ds3ais ***nsa_ds3ais***	Alarm Indication Signal - DS3	*	**CR** **NR**
		Starting in Release 6.1.5, the inital value of ***sa_ds3ais*** is **NR**		**NR**
	sa_ds3ber ***nsa_ds3ber***	DS3 Bit Error	*	**MJ** **MN**
	sa_ds3idle ***nsa_ds3idle***	DS3 Idle Signal	*	**CR** **MN**
		Starting in Release 4.0, the initial value of ***nsa_ds3idle*** is **NR**.		**NR**
	sa_cbitmm ***nsa_cbitmm***	DS3 C-bit mismatch (starting in Release 6)	*	**CR** **MN**
DS3OUT				
	ais	Alarm Indication Signal - Path	*	**CR**
	lop	Loss of Pointer - Path (starting in Release 5)	*	**CR**
	rfi	Remote Failure Indication - Path	*	**NR**
	uneq	STS Path Unequip	*	**CR**
	plm	STS Payload Label Mismatch	*	**CR**
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**
	sa_gfplof ***nsa_gfplof***	Loss of Frame Delineation	*	**CR** **NR**
	sa_vcgsf ***nsa_vcgsf***	VCG Signal Fail	*	**NR** **NR**
	sa_lopc ***nsa_lopc***	Loss of Partial Capacity	*	**CR** **NR**

Table 3-29. ED-ASAP-PROF Input Parameters (Sheet 6 of 9)

Parameter Name	Description			
	sa_lotc ***nsa_lotc***	Loss of Total Capacity	*	**CR** **NR**
	sa_fopr ***nsa_fopr***	Failure of Protocol Rx	*	**CR** **NR**
	sa_fopt ***nsa_fopt***	Failure of Protocol Tx	*	**CR** **NR**
ENV				
	MISC_INn (n=1-16}	miscellaneous discrete inputs (starting in Release 5)	*	**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 3)	*	**-** **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 3)	*	**MJ** **MN**
	sa_mmis ***nsa_mmis***	Memory Mismatch (starting in Release 3)	*	**MJ** **MN**
	sa_nvmusg ***nsa_nvmusg***	Non-Volatile Memory Usage (starting in Release 3)	*	**MJ** **MN**
	sa_dccpr ***nsa_dccpr***	DCC Partition Repair (starting in Release 5)	*	**-** **MN**

Table 3-29. ED-ASAP-PROF Input Parameters (Sheet 7 of 9)

Parameter Name	Description			
	sa_dccto ***nsa_dccto***	DCC Tunnel Overflow (starting in Release 5)	*	**-** **MN**
PT				
	lop	Loss of Pointer - Path	*	**CR**
	ais	Alarm Indication Signal - Path	*	**CR**
		Starting in Release 6.1.5 the initial value of ***ais*** is **NR**.	*	**NR**
	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**
SONET				
	sa_los ***nsa_los***	service-affecting Loss of Signal nonservice-affecting Loss of Signal	*	**CR** **MN**
	sa_plos ***nsa_plos***	Pulsed Loss of Signal	*	**CR** **MN**
	sa_lof ***nsa_lof***	Loss of Frame	*	**CR** **MN**
	sa_aisl ***nsa_aisl***	Alarm Indication Signal - Line	*	**NR** **NR**
	sa_rfil ***nsa_rfil***	Remote Failure Indication	*	**NR** **NR**
	sa_eber ***nsa_eber***	Excessive Error	*	**CR** **MN**
	sa_ber ***nsa_ber***	Bit Error/Signal Degrade	*	**MJ** **MN**
	sa_dccsect ***nsa_dccsect***	DCC Sect Failure	*	**-** **MN**

Table 3-29. ED-ASAP-PROF Input Parameters (Sheet 8 of 9)

Parameter Name	Description			
	sa_dccline ***nsa_dccline***	DCC Line Failure (starting in Release 4.0.1)	*	**- MN**
	sa_lidsectmm ***nsa_lidsectmm***	LinkID Sect Mismatch	*	**- MN**
	sa_lidlinemm ***nsa_lidlinemm***	LinkID Line Mismatch (starting in Release 3)	*	**- MN**
	sa_unssect ***nsa_unssect***	User-Network Side Sect Failure	*	**- MN**
	sa_unsline ***nsa_unsline***	User-Network Side Line Failure (starting in Release 3)	*	**- MN**
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**
	csrc	Constituent Signal Rate Change (starting in Release 3)	**	**NA**
	almtst	Alarm Test	**	**NR**
	dccsectdu	DCC Sect Disabled-Unavailable (starting in Release 3)	**	**NA**
	dcclinedu	DCC Line Disabled-Unavailable (starting in Release 3)	**	**NA**
	dcctypm	DCC Type Mismatch (starting in Release 3)	**	**NA**
	far_end_cr	Far end critical alarm on RNES (starting in Release 6.0)	*	**CR**
	far_end_mj	Far end major alarm on RNES (starting in Release 6.0)	*	**MJ**
	far_end_mn	Far end minor alarm on RNES (starting in Release 6.0)	*	**MN**

Table 3-29. ED-ASAP-PROF Input Parameters (Sheet 9 of 9)

Parameter Name	Description			
	agne	AGNE Communication Failure		**MJ**
TIMING				
	syncref	Sync Reference Failure (external reference)	*	**MJ**
	holdover	System Clock Holdover	*	**MN**
	linesync	Line Sync Reference Failure (starting in Release 3)	*	**NR**
TRIBSONET				
	sa_lop ***nsa_lop***	sa Loss of Pointer nsa Loss of Pointer	*	**CR** **MN**
	sa_ais ***nsa_ais***	Alarm Indication Signal - Path	*	**NR** **NR**
	sa_uneq ***nsa_uneq***	STS Path Unequip	*	**CR** **NR**
		Starting in Release 6.1.5 the initial value of ***nsa_uneq*** is **MN**.	*	**MN**
	sa_pdi ***nsa_pdi***	STS Payload Defect Indicator	*	**NR** **NR**
	sa_eber ***nsa_eber***	Excessive Error - Path	*	**NR** **NR**
	sa_ber ***nsa_ber***	Bit Error/Signal Degrade - Path	*	**NR** **NR**
	sa_srm ***nsa_srm***	Signal Rate Mismatch (starting in Release 2)	*	**MJ** **MN**

***** 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

Starting with Release 2, 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 3-30. 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: ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3)

Table 3-30. ED-CRS Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **STS48** (starting in Release 4)
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 5.0, 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 5.0, 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 3-31. 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 4.0, 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 3-31. 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 STS1 BLSR cross-connection:

```
ED-CRS-STS1:LT-WBM-789:4-2-#-#-02-2-1,4-2-#-#-09-1-7:123456:::LOCZ=
LT-WBM-456;

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

The following example shows the successful completion of **ED-CRS** command by the network element. The example below modifies the output mode of an existing STS1 non-BLSR cross-connection:

```
ED-CRS-STS1:LT-WBM-789:2-1-#-#-14-2,1-1-#-#-1-13-1:123456:::OMODE=
IDLE/UNEQ;

   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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-32. 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 3-32. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-33. ED-EPORT Input Parameters

Parameter Name	Description
modifier	Modifier. This parameter is available starting in Release 5. 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 5. 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 3-34. 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 5. 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 3-34. 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 5. 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 5. Values: ■ **NA** (initial value) ■ **HIGH** ■ **LOW**
dftvlan	Default VLAN Identifier. This parameter is available starting in Release 5. 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 5. Value(s): Alphanumeric string with a maximum of 24 characters. The first character must be a letter. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 5. 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 5. Values: ■ **MON** ■ **NMON** ■ **AUTO** (initial value)
eppm	Ethernet Port PM Enable. This parameter is available starting in Release 5. Values: ■ **ENABLE** ■ **DISABLE** (initial value)

Table 3-34. ED-EPORT Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
fcmd	Flow Control Mode. This parameter is available starting in Release 5. Values: ■ **DISABLE** ■ **AUTO** (initial value)
rptmode	Repeater Mode. (Promiscuous mode) This parameter is available starting in Release 6. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4 and P3

Beginning with Release 4.0, 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 3-35. 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 4. This parameter is the address of the equipment component to be modified. Value(s):

Table 3-35. `ED-EQPT` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ shelf AID ■ slot AID The “all” keyword is allowed. ■ circuit pack AID
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 4. 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 4. 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 3-36. `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 5. 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 5. This parameter is only allowed with a slot AID. Value(s): See the description of the ***nvmname*** parameter in the **`ENT-EQPT`** command.

Table 3-36. ED-EQPT Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
nvmqual	Circuit Pack Qualifier. This parameter is available starting in Release 5. 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.
ssoride	SS Bit Override. This parameter is available starting in Release 6. This parameter is only allowed with an I/O shelf AID, and is used to override normal SS bit provisioning on a per-I/O shelf basis when interworking with non-compliant SONET network elements. Values: ■ **ENABLE** ■ **DISABLE** (Initial value).
trbmddflt	This parameter is available starting in Release 4.0.1. Tributary Mode Default. This parameter is only allowed with a system AID. At first start-up, the system goes into MCOND state and demands a user input for this parameter. The port parameter ***trbmd*** in the ED-rr and RTRV-rr commands then inherits this "system level default" value that the user just entered. Changing the system level default has no affect on established ports, only on ports that are established from that point onwards. Values: ■ **ADAPTIVE** ■ **FIXED**.

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:::syswait=5-50,istddflt=SONET;

   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
- 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

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

RMV-EQPT

RST-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ED-IP-TUNNEL: Edit IP Tunnel

The **ED-IP-TUNNEL** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-37. 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 3-38. `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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-39. 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 3-40. ED-NE Input *spec_block* Parameters

Parameter Name	Description
duara	Directory User Agent and Registration Agent. This parameter is available starting in Release 2. Values: ■ **ENABLE** (initial value) ■ **DISABLE**. If the parameter is omitted, the current value is not modified.
tl1tcpipgw	This parameter is available starting with Release 5. 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.

If the value specified for ***elapstm*** is not a factor of 24, then the following error statement is returned:

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

RELATED TL1 MESSAGES

RTRV-NE

NAME

ED-NE-RNES: Edit network element remote NE status

The **ED-NE-RNES** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-NE-RNES:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

The **ED-NE-RNES** command modifies attributes associated with the network element that pertain to Remote Network Element Status alarming. A brief description of this remote alarming feature follows.

A network element sends its alarms to the Alarm Gateway Network Elements (AGNE) in its Alarm Group. The AGNE then broadcasts this information to all the other Network Elements in that same Alarm Group. The network elements which have the remote activity detection capability enabled, will light their Far-End Activity indicator on the User Panel. This invites the CIT-user to login, and use the **RTRV-ALM-NTWK** command to retrieve alarm information for all network elements that are in the alarm group. Detailed information for a particular remote network element can be found by executing a remote login to that network element and using the **RTRV-ALM** command and **RTRV-ALM-ENV**.

The **RTRV-NE-RNES** command displays the parameters whose values can be set by **ED-NE-RNES**.

Execution of this command does not require the network element to be in maintenance condition (MCOND).

The **ED-NE-RNES** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

The input parameters are described in the table that follows

Table 3-41. ED-NE-RNES 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 3-42. ED-NE-RNES Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
agne	Alarm Gateway Network Element. This parameter indicates whether the network element is a gateway for the RNES application. The alarm gateway network element(s) collects the alarms and distributes the information to all network elements in the alarm group. For redundancy, there can be more then one AGNE. Values: ■ **YES** ■ **NO** (initial value).
almgrp	Alarm group. This parameter defines the network element's alarm group. The local network element will exchange remote alarm information with all other network elements which are connected by the DCC and have the same ***almgrp*** value. The **RTRV-ALM-NTWK** command can be used to retrieve far-end alarms for the alarm group. Values: ■ **1-255** The initial value is 255.

Table 3-42. ED-NE-RNES Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
rnestat	Remote Network Element Status. This parameter enables or disables the RNES application. If disabled, then the far-end alarms will not set the far-end activity indicator on the user panel. If disabled, then the **RTRV-ALM-NTWK** command will not display far-end alarms for this network element. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

OUTPUT FORMAT

If the network element fully complies with the **ED-NE-RNES** 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-NE-RNES** command.

EXAMPLE INPUT/OUTPUT

The following example edits RNES parameters:

```
ED-NE-RNES:LT-WBM::123456:::rnestat=enable,almgrp=248,agne=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 pertain to the **ED-NE-RNES** command.

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
- The network element is not able to accept the provisioning command as it is currently busy with other RNES related operations.

RELATED TL1 MESSAGES

RTRV-ALM

RTRV-ALM-ENV

RTRV-ALM-NTWK

RTRV-NE-RNES

NAME

ED-NE-SECU: Edit network element Security

The **ED-NE-SECU** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

Beginning in Release 2.0, the syntax is:

ED-NE-SECU:*tid*::*ctag*::*spec_block*;

Beginning in Release 3.0, 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 3-43. ED-NE-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.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-43. ED-NE-SECU Input Parameters (Sheet 2 of 2)

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

Table 3-44. ED-NE-SECU Input *spec_block* Parameters

Parameter Name	Description
intrvl	Lockout Period. This parameter is available starting in Release 2. 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 4.0.1. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-45. 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 6.0, 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

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 3-46. 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 3-46. ED-PROTN-ACC Input Parameters (Sheet 2 of 2)

Parameter Name	Description
protype	Protection Type. Values: ■ **2F** (starting in Release 6)
spec_block	For this command all spec_block parameters are mandatory. See the following "**ED-PROTN-ACC *spec_block*** Parameters" table.

Table 3-47. 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**

Table 3-47. ED-PROTN-ACC *spec_block* Parameters (Sheet 2 of 2)

Parameter	Description/PROTYPE	Value
timeslot	Timeslot number for which the attribute is set.	Values: ■ **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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 5, **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 3-48. 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 2) ■ **2F**: port AID (starting in Release 2) ■ **PATHDRI:** input tributary AID (starting in Release 5). 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 5). 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 3-48. 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. The actual case of the ***ppgname*** is set the first time it is used in the **ENT-CR**S command.
protype	Protection Type. Values: ■ **1+1** (starting in Release 2) ■ **2F** (starting in Release 2) ■ **PATHDRI** (starting in Release 4.0.1) ■ **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 2) Starting in Release 5.0, 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). Starting in Release 6.1.5, the value can only 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 3-49. ED-PROTN-GRP *spec_block* Parameters (Sheet 1 of 4)

Parameter	Description/PROTYPE	Value
apspn	APS protection switch profile name. This parameter is applicable to the following ***protypes***: ■ **1+1** (starting in Release 5).	 profile name
blsrpn	BLSR protection switch profile name. This parameter is applicable to the following ***protypes***: ■ **2F** (starting in Release 5)	 profile name
dcclm-sprotmd	DCC line/MS protection mode. Starting in Release 4.0.1, this parameter is applicable to the following ***protype(s)***: ■ **1+1** (starting in Release 4.0.1).	**DISABLE** is the initial value. **ENABLE**, **DISABLE**
dccsr-sprotmd	DCC Sect/RS protection mode. Starting in Release 4.0.1, this parameter is applicable to the following ***protype(s)***: ■ **1+1** (starting in Release 4.0.1).	**DISABLE** is the initial value. **ENABLE**, **DISABLE**
dripathpn	DRI/Path protection switch profile name. This parameter is applicable to the following ***protype(s)***: ■ **PATHDRI** (starting in Release 4.1).	 profile name
hte	Holdoff Timer Enable. This parameter is applicable to the following ***protype(s)***: ■ **PATHDRI** (starting in Release 4.0.1).	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 5)	 **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 3-49. ED-PROTN-GRP *spec_block* Parameters (Sheet 2 of 4)

Parameter	Description/PROTYPE	Value
newppg-name	Path Protection Group Identification Name (starting in Release 5). 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)***: ■ **PATHDRI**. The maximum number of path protection groups that can have the same name is 192. The maximum number of unique path-protection names is 320.	If the value is omitted, the current value is not modified. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes.
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.

Table 3-49. `ED-PROTN-GRP` *spec_block* Parameters (Sheet 3 of 4)

Parameter	Description/PROTYPE	Value
	■ **2F** (starting in Release 2)	ASCII string of up to 15 characters from the TID character set
	Starting in Release 4.0:	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). Starting in Release 6.1.5, the value can only 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).
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 5).	**1+1_UNI** is the initial value. **1+1_UNI**, **1+1_BIDIR**
rme	Revertive Mode Enable. This parameter is applicable to the following ***protype(s)***: ■ **1+1** (starting in Release 5).	**ENABLE**, **DISABLE** The initial value is **DISABLE**.

Table 3-49. ED-PROTN-GRP *spec_block* Parameters (Sheet 4 of 4)

Parameter	Description/PROTYPE	Value
	■ **PATHDRI** (starting in Release 4.0.1).	**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 5.0, 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**	**0**-**12** and **99** (which represents infinity). The units of ***wtr*** are minutes.
	■ **2F** (starting in Release 2)	**0**-**12** and **99**.

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

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 3-50. 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 3-50. ED-PROTN-TYPE Input Parameters

Parameter Name	Description
protype	Protection Type. Value(s): ■ **PATHDRI**.
spec_block	The following are the ***spec_block*** parameters.

Table 3-51. 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-RDL: Edit Red Line

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ED-RDL-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::::*state_block*;

DESCRIPTION

The **ED-RDL** command can be initiated by a user to modify the red-line value of an existing cross-connection in a network element.

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

INPUT PARAMETERS

Table 3-52. ED-RDL Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the edit red line command is to act on. Values: ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)

Table 3-52. ED-RDL Input Parameters (Sheet 2 of 2)

Parameter Name	Description
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: logical tributary AID.
out_aid	Output Access Identifier. See the AID table in OSEG Appendix A. Value: logical tributary AID.
ctag	Correlation Tag. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.
state_block	***pst*** Specifies the primary state. THIS PARAMETER IS NOT USED IN THE **ED-RDL** COMMAND. A comma (,) is placed in this position to indicate that this is not in use. ***sst*** Specifies the new red-line value of the circuit. Values: ■ **YES** ■ **NO**.

OUTPUT FORMAT

If the **ED-RDL** 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-RDL** command if the red-line value of the cross-connection specified in the command is the same as its previous value.

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 **ED-RDL** command by the network element:

```
ED-RDL-STS1:LT-WBM-789:4-2-#-#-02-2-1,4-2-#-#-09-1-7:123456::::,NO;

   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 **ED-RDL** command.

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

RELATED TL1 MESSAGES

DLT-CRS

ED-CRS

ENT-CRS

RTRV-CRS

NAME

ED-rr: Edit rr

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

Table 3-53. Syntax of **ED-rr**

Command Syntax
ED-EC1:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 3)
ED-OC3:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 2)
ED-OC12:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 2)
ED-OC48:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 2)
ED-OC192:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 3)
ED-STS1:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 2)
ED-T3:*tid*:*aid*:*ctag*:::*spec_block*; (starting in Release 3)

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-OCn**. The **rr** column identifies the **ED-rr** command. If the **rr** field is blank, then the row applies to all **ED-rr** commands.

If ***eif*** is equal to DS3, then the **ED-EC1** command will be DENY'd. For this case, first use **ED-T3** to change ***eif*** to EC1.

Table 3-54. ED-OCn Input Parameters

rr	Parameter Name	Description
	tid	Target Identifier. Refer to **RTRV-HDR** command for input parameter syntax and description of this parameter.
EC1	***aid***	Access Identifier (starting in Release 3) Values: ■ electrical port AID ■ An AID range using the ALL keyword is also allowed, but only within one shelf ■ **OC3**. See the AID table in OSEG Appendix A.
OC3	***aid***	See OC48 (starting in Release 2).
OC12	***aid***	See OC48 (starting in Release 2).
OC48	***aid***	Access Identifier. Values: ■ port AID of a SONET port ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
OC192	***aid***	See OC48 (starting in Release 3).
	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 3-55. ED-OCn Input *spec_block* Parameters (Sheet 1 of 8)

rr	Parameter Name	Description
OC192	***als***	Automatic Laser Shutdown (starting in Release 5). Enable/Disable the automatic laser shutdown procedure. ALS procedure switches off the laser during a fiber cut. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
EC1	***eif***	Electrical Interface Type (EIF). This parameter sets the electrical interface on the circuit pack to accept a DS3 or EC1 formatted signal. If the actual received signal type is different from the value that is provisioned here, a signal type mismatch will be detected. Values: ■ **DS3** (initial value) ■ **EC1**.
EC1	***emi***	See OC48 (starting in Release 3).
OC3	***emi***	See OC48 (starting in Release 2).
OC12	***emi***	See OC48 (starting in Release 2).
OC48	***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**.
OC192	***emi***	See OC48 (starting in Release 3).
OC192	***fec***	FEC Mode Enable (starting in Release 3). Activates Forward Error Correction processing in a service affecting way. See also ***feccor***. Values: ■ **ENABLE** (initial value) ■ **DISABLE**.

Table 3-55. ED-OCn Input *spec_block* Parameters (Sheet 2 of 8)

rr	Parameter Name	Description
OC192	***feccor***	FEC Correction Enable (starting in Release 3). Turns on correction processing (non-service affecting) once ***fec*** has been enabled. Has no effect if ***fec*** has not been enabled. Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
OC192	***fectype***	FEC Type (starting in Release 4). Values: ■ **INBAND** (initial value) ■ **OUTBAND**.
EC1	***felpm***	See OC48 (starting in Release 3).
OC3	***felpm***	See OC48 (starting in Release 3).
OC12	***felpm***	See OC48 (starting in Release 3).
OC48	***felpm***	Far-End Line PM Enable (starting in Release 3). This enables/disables the far-end line parameters performance monitoring. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
OC192	***felpm***	See OC48 (starting in Release 3).
OC3	***frcdus***	See OC48.
OC12	***frcdus***	See OC48.
OC48	***frcdus***	Force DUS for sync messaging on optical interfaces (starting in Release 4). When provisioned for **ENABLE**, the message “do not use” will be transmitted from that optical interface. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-55. ED-OCn Input *spec_block* Parameters (Sheet 3 of 8)

rr	Parameter Name	Description
OC192	***frcdus***	Force DUS for sync messaging on optical interfaces (starting in Release 4). When provisioned for **ENABLE**, the message “do not use” will be transmitted from that optical interface. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
OC3	***inputsig***	See OC48 (starting in Release 2).
OC12	***inputsig***	See OC48 (starting in Release 2).
OC48	***inputsig***	Tributary Input Signal Rate List. This parameter is a list of STS rates across the port's bandwidth. Values: **NX-NX-NX…** where N is the number of Xs. X can be 1, 3, or 12 representing STS1, STS3C, or STS12C. The initial value of X is 1 and the initial value of N is the line rate. Example: for an OC-48 port, the initial value is 481. Example: an OC-48 signal might be represented by 91-13-112-241 which implies 9 STS1s, 1 STS3C, 1 STS12C, 24 STS1s. If ***trbmd*** is **FIXED**, then ***inputsig*** constrains the cross-connection rates that can be entered for the port. If ***trbmd*** is **ADAPTIVE**, then ***inputsig*** should not be used. Starting in Release 4, X may have the value 48 which represents STS48C. The sum of all numbers will be the port’s rate. For example, for an OC48 port, the sum will be 48. A 3C must start on a mod-3 boundary (e.g., STS #1, 4, 7, etc.). A 12C must start on a mod-12 boundary. 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.
OC192	***inputsig***	See OC48 (starting in Release 3). Starting in Release 5.0, X may have the value 192 which represents STS192C.

Table 3-55. ED-OCn Input *spec_block* Parameters (Sheet 4 of 8)

rr	Parameter Name	Description
OC192	***laser***	Provisioned laser state (starting in Release 5). Values: ■ **OFF** ■ **ON** (initial value).
OC192	***oatasc***	OAT Association (starting in Release 5). It indicates the OAT that is associated with this port. Value: ■ slot AID ■ NONE Starting in Release 6.1.5, the ***oatasc*** parameter is no longer supported.
OC48	***phypm***	Physical PM Enable (starting in Release 3). This enables/disables the physical parameters performance monitoring. Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
OC192	***phypm***	See OC48 (starting in Release 3).
OC48	***phytca***	Physical TCA (starting in Release 3). This parameter points a PM physical TCA profile name to the designated AID (See **ENT-TCA-PROF** command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value). Starting in Release 5.0, the **Default0** profile will be changed to **NotReported**.
OC192	***phytca***	See OC48 (starting in Release 3).
EC1	***pmode***	See OC48 (starting in Release 3).
OC3	***pmode***	See OC48 (starting in Release 2).
OC12	***pmode***	See OC48 (starting in Release 2).

Table 3-55. ED-OCn Input *spec_block* Parameters (Sheet 5 of 8)

rr	Parameter Name	Description
OC48	***pmode***	Port Mode. This parameter sets the mode of the port. 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.
OC192	***pmode***	See OC48 (starting in Release 3).
EC1	***sdthr***	See OC48 (starting in Release 3).
OC3	***sdthr***	See OC48 (starting in Release 2).
OC12	***sdthr***	See OC48 (starting in Release 2).
OC48	***sdthr***	Signal Degrade Threshold. This sets the BER threshold for the optical signal. Values (as exponents of 10): ■ **-5** ■ **-6** (initial value $\mathbf{10^{-6}}$) ■ **-7** ■ **-8** ■ **-9**.
OC192	***sdthr***	See OC48 (starting in Release 3).
EC1	***sfthr***	See OC48 (starting in Release 3).
OC3	***sfthr***	See OC48 (starting in Release 2).
OC12	***sfthr***	See OC48 (starting in Release 2).
OC48	***sfthr***	Signal Failure Threshold. This sets the excessive BER threshold for the optical signal. Values (as exponents of 10): ■ **-3** (initial value $\mathbf{10^{-3}}$) ■ **-4** ■ **-5**.
OC192	***sfthr***	See OC48 (starting in Release 3).

Table 3-55. ED-OCn Input *spec_block* Parameters (Sheet 6 of 8)

rr	Parameter Name	Description
EC1	***sltca***	See OC48 (starting in Release 3).
OC3	***sltca***	See OC48 (starting in Release 3).
OC12	***sltca***	See OC48 (starting in Release 3).
OC48	***sltca***	Section and Line TCA (starting in Release 2). This parameter points a PM section and line TCA profile name to the designated AID (See **ENT-TCA-PROF** command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value). Starting in Release 5.0, the **Default0** profile will be changed to **NotReported**.
OC192	***sltca***	See OC48 (starting in Release 3).
EC1	***snelpm***	Section and Near-End Line PM Enable (starting in Release 3). This enables/disables the section and near-end line parameters performance monitoring. Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
OC3	***snelpm***	See OC48 (starting in Release 3).
OC12	***snelpm***	See OC48 (starting in Release 3).
OC48	***snelpm***	Section and Near-End Line PM Enable (starting in Release 3). This enables/disables the section and near-end line parameters performance monitoring. Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
OC192	***snelpm***	See OC48 (starting in Release 3).
EC1	***sonet***	See OC48 (starting in Release 3).
OC3	***sonet***	See OC48 (starting in Release 3).
OC12	***sonet***	See OC48 (starting in Release 3).

Table 3-55. ED-OCn Input *spec_block* Parameters (Sheet 7 of 8)

rr	Parameter Name	Description
OC48	***sonet***	SONET Alarm Severity Assignment Profile (starting in Release 3). This parameter sets a SONET 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).
OC3	***strcwfmt***	See OC48 (starting in Release 5).
OC12	***strcwfmt***	See OC48 (starting in Release 5).
OC48	***strcwfmt***	Starting in Release 5, 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.
OC192	***strcwfmt***	See OC48 (starting in Release 5).
OC3	***strcout***	See OC48 (starting in Release 5).
OC12	***strcout***	See OC48 (starting in Release 5).
OC48	***strcout***	Starting in Release 5, 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)
OC192	***strcout***	See OC48 (starting in Release 5).
OC3	***trbmd***	See OC48 (starting in Release 4.0.1).
OC12	***trbmd***	See OC48 (starting in Release 4.0.1).

Table 3-55. ED-OCn Input *spec_block* Parameters (Sheet 8 of 8)

rr	Parameter Name	Description
OC48	***trbmd***	Tributary Mode (starting in Release 4). The initial value is set with the ***trbmddflt*** parameter in the **ED-EQPT** command. Values: ■ **ADAPTIVE** ■ **FIXED**. If the ***trbmddflt*** parameter has not been previously set, the command will be DENY'd. If ***istd*** is changed from **SONET** to **SDH**, then ***trbmd*** is set to **FIXED**. If ***trbmd*** is **FIXED**, then ***inputsig*** constrains the cross-connection rates that can be entered for the port. If ***trbmd*** is **ADAPTIVE**, then ***inputsig*** should not be used
OC192	***trbmd***	See OC48 (starting in Release 4.0.1).
OC3	***unequi-posig***	See OC48 (starting in Release 2).
OC12	***unequi-posig***	See OC48 (starting in Release 2).
OC48	***unequi-posig***	Tributary Unequipped Output Signal Rate List (starting in Release 2). This parameter is a list of STS 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***.
OC192	***unequi-posig***	See OC48 (starting in Release 3).

The table that follows describes the input parameters for **ED-STS1**. The **ED-STS1** command is also applicable to STS3c 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 3-56. `Tributary` Input Parameters

rr	Parameter Name	Description
	tid	Target Identifier. Refer to **`RTRV-HDR`** command for input parameter syntax and description of this parameter.
STS1	***aid***	Access Identifier. Values: ■ tributary AID of a SONET tributary ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A. [The **`ED-STS1`** command is also applicable to STS3c and other concatenated tributary signals.]
	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 3-57. `Tributary` Input *spec_block* Parameters (Sheet 1 of 3)

rr	Parameter Name	Description
STS1	***degthr***	Path BER Threshold (starting in Release 4). Values (as exponents of 10): ■ **-5** ■ **-6** (initial value $\mathbf{10^{-6}}$) ■ **-7** ■ **-8** ■ **-9**.
STS1	***dexcthr***	Excessive Degrade Threshold (starting in Release 4). This is more severe than ***degthr***, the degrade threshold. Values: (as exponents of 10) ■ **-3** (initial value $\mathbf{10^{-3}}$) ■ **-4** ■ **-5**.

Table 3-57. `Tributary` Input *spec_block* Parameters (Sheet 2 of 3)

rr	Parameter Name	Description
STS1	***msdexc***	Multiplex Section DEXC Threshold. Values: (as exponents of 10) ■ **-3** (initial value 10^{-3}) ■ **-4** ■ **-5**. The parameter ***msdexc*** is replaced in Release 4 by ***dexcthr***.
STS1	***ppm***	Path PM Enable (starting with Release 2). This enables/disables the STS-1 path parameters performance monitoring for both the near end and far end. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
STS1	***pse***	PDI-P Switching Enable (starting in Release 4.0.1). Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
STS1	***ptca***	Path TCA (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** ■ **Default0** (initial value). Starting in Release 5.0, the **Default0** profile will be changed to **NotReported**.
STS1	***ptrcrfmt***	Starting in Release 2, 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.

Table 3-57. `Tributary` Input *spec_block* Parameters (Sheet 3 of 3)

rr	Parameter Name	Description
STS1	***tmonmd***	Tributary Monitoring Mode. 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.
STS1	***tribsonetpn***	Tributary Alarm Severity Assignment Profile (starting in Release 3). 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).

The table that follows describes the input parameters for **`ED-T3.`**

If ***eif*** is equal to EC1, then the **`ED-T3`** command will be DENY'd. For this case, first use **`ED-EC1`** to change ***eif*** to DS3.

Table 3-58. `ED-T3` 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.
T3	***aid***	Access Identifier. Values: ■ electrical 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.)
	ctag	Correlation Tag. Refer to **`RTRV-HDR`** command for input parameter syntax and description of this parameter.

Table 3-58. ED-T3 Input Parameters (Sheet 2 of 2)

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

Table 3-59. ED-T3 Input *spec_block* Parameters (Sheet 1 of 6)

rr	Parameter Name	Description
T3	***ds3in***	DS3 Input Port Alarm Severity Assignment Profile (starting in Release 3). This parameter sets a DS3 input port ASAP profile name to which the designated AID points. The profile will be of type DS3IN. See the **ENT-ASAP-PROF** command for details about ASAP. Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** (initial value).
T3	***ds3out***	DS3 Output Port Alarm Severity Assignment Profile (starting in Release 3). This parameter sets a DS3 output port ASAP profile name to which the designated AID points. See the **ENT-ASAP-PROF** command for details about ASAP. Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** (initial value). If the profile type of the port is changed, then the profile name is reset to **Default**.
T3	***eif***	Electrical Interface Type (starting in Release 3). This parameter sets the electrical interface on the circuit pack to accept a DS3 or EC-1 formatted signal. If the actual received signal type is different from the value that is provisioned here, a signal type mismatch will be detected. Values: ■ **DS3** (initial value) ■ **EC1**.

Table 3-59. ED-T3 Input *spec_block* Parameters (Sheet 2 of 6)

rr	Parameter Name	Description
T3	***fmt***	DS3 Signal Format. This sets the format for the DS3 signal. Values: ■ **C-BIT** (initial value) supports a C-bit parity channelized DS3 format. It may support full P-bit parity VMR, VM, or no VM monitoring. It may also use full C-bit parity monitoring. This is the initial value. ■ **M23** supports the M23 channelized DS3 format. It may support full P-bit parity VMR, VM, or no VM monitoring. The C-bit monitoring is disabled for this format. ■ **FRAMED** supports the standard M-frame DS3 format. It may be channelized or unchannelized. It may support full P-bit parity VMR, VM, or no VM monitoring. ■ **UNFRAMED-CC**: When **UNFRAMED AND CLEAR-CHANNEL** format has been set, the system disables P-bit parity VMR, VM, and C-bit parity monitoring.
T3	***inpm***	DS3 Incoming PM Enable (starting in Release 3). This enables/disables the incoming DS3 parameters performance monitoring. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
T3	***itca***	Incoming DS3 PM TCA (starting in Release 3). This parameter points an incoming DS3 PM TCA profile name to the designated AID (See **ENT-TCA-PROF** command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value). Starting in Release 5.0, the **Default0** profile will be changed to **NotReported**.

Table 3-59. ED-T3 Input *spec_block* Parameters (Sheet 3 of 6)

rr	Parameter Name	Description
T3	***otca***	Outgoing DS3 PM TCA (starting in Release 3). This parameter points an outgoing DS3 PM TCA profile name to the designated AID (See **ENT-TCA-PROF** command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value). Starting in Release 5.0, the **Default0** profile will be changed to **NotReported**.
T3	***outmntc***	DS3 Outgoing Maintenance Signal. Determines whether an **AIS** or **IDLE** signal is transmitted in response to an unconnected input. Starting in Release 5.0, the values are: ■ **AIS** (initial value) ■ **IDLE**.
T3	***outpm***	DS3 Outgoing PM Enable (starting in Release 3). This enables/disables the outgoing DS3 parameters performance monitoring. Values: ■ **ENABLE** ■ **DISABLE** (initial value).
T3	***pdir***	Port Directionality. This parameter allows the port to operate in bidirectional or unidirectional port mode. Values: ■ **BIDIR** (initial value) ■ **UNIDIR-TRM** ■ **UNIDIR-RCV**.

Table 3-59. ED-T3 Input *spec_block* Parameters (Sheet 4 of 6)

rr	Parameter Name	Description
T3	***pmode***	Port Mode (starting in Release 3). This parameter sets the mode of the port. 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.
T3	***pmesl***	PM Threshold (errors in a second) for declaring SES - Line (starting in Release 3). Values: ■ **44** (initial value) ■ **2444**.
T3	***pmesp***	PM Threshold (errors in a second) for declaring SES - Path (starting in Release 3). Values: ■ **44** (initial value) ■ **2444**.
T3	***pmespfe***	PM Threshold (errors in a second) for declaring Far-End SES - Path (starting in Release 3). Values: See ***pmesp***.
T3	***ptffmcrs***	PTF FM Cross-Connect Dependency (starting in Release 3). Values: ■ **YES** (initial value if ***ptfstd*** is SONET) ■ **NO** (initial value if ***ptfstd*** is SDH).
T3	***ptfpm***	PTF PM Enable (starting in Release 4). It indicates if this performance monitoring feature is enabled or disabled. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-59. ED-T3 Input *spec_block* Parameters (Sheet 5 of 6)

rr	Parameter Name	Description
T3	***ptftca***	PTF TCA Profile Pointer (starting in Release 4). Values: ■ Alphanumeric string with a maximum of 24 characters ■ **Default** ■ **Default0** (initial value).
T3	***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. ■ **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.
T3	***sdthr***	Signal Degrade Threshold. This sets the BER threshold for the DS3 electrical signal. Values (as exponents of 10): ■ **-4** ■ **-6** (initial value $\mathbf{10^{-6}}$). The value of **-4** is actually $\mathbf{4 \times 10^{-4}}$ BER. The values range has been enhanced to: **1E-3**, **1E-4**, **4E-4**, **1E-5**, **1E-6**, **1E-7**, **1E-8**, **1E-9**.
T3	***tmonmd***	Tributary Monitoring Mode (starting in Release 3). This parameter sets the tributary monitoring 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.

Table 3-59. ED-T3 Input *spec_block* Parameters (Sheet 6 of 6)

rr	Parameter Name	Description
T3	***trc***	Outgoing Path Trace. 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).
T3	***vmr***	DS3 Violation Monitoring Mode. This parameter supports the DS3 P-bit parity violation monitoring and removal. Values: ■ **NO-VM** (initial value) ■ **VMR** ■ **VM**.

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 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:

- Illegal Port Mode Value.

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***, 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 4.0, 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 3-60. 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 2. Value: system AID. See the AID table in OSEG Appendix A.

Table 3-60. 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 3-61. ED-STATE-EQPT Input *spec_block* Parameters

Parameter Name	Description
mcond	Maintenance Condition. This parameter is available starting in Release 2. 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

RMV-EQPT

RST-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ED-TCA-PROF: Edit TCA Profile

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 5.0, the **Default0** profile will be changed to **NotReported**.

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

INPUT PARAMETERS

Table 3-62. 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 3-62. 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: ■ **DS3** ■ **ENET** ■ **PATH** ■ **PHYSICAL** ■ **SECTION-LINE**.
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 3-63. ED-TCA-PROF Input ***spec_block*** Parameters (Sheet 1 of 7)

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 3-63. ED-TCA-PROF Input ***spec_block*** Parameters (Sheet 2 of 7)

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 parameters belong to **SECTION-LINE** profile type:
qhcvsoc3	15-minute CV-S bin for OC-3. Range: **0**-**16777215** (**140**)
daycvsoc3	Day CV-S bin for OC-3. Range: **0**-**2147483647** **(**1344**)
qhcvsoc12	15-minute CV-S bin for OC-12. Range: **0**-**16777215** (**560**)
daycvsoc12	Day CV-S bin for OC-12. Range: **0**-**2147483647** ** (**5376**)
qhcvsoc48	15-minute CV-S bin for OC-48. Range: **0**-**16777215** (**2240**)
daycvsoc48	Day CV-S bin for OC-48. Range: **0**-**2147483647** ** (**21504**)
qhcvsoc192	15-minute CV-S bin for OC-192. Range: **0**-**16777215** (**8960**)
daycvsoc192	Day CV-S bin for OC-192. Range: **0**-**2147483647** ** (**86016**)
qhess	15-minute ES-S bin. Range: **0**-**900** (**25**)
dayess	Day ES-S bin. Range: **0**-**86400** (**250**)
qhsess	15-minute SES-S bin. Range: **0**-**810** (**10**)
daysess	Day SES-S bin. Range: **0**-**77760** (**40**)

Table 3-63. ED-TCA-PROF Input ***spec_block*** Parameters (Sheet 3 of 7)

Parameter Name	Description
qhsefss	15-minute SEFS-S bin. Range: **0**-**900** (**5**)
daysefss	Day SEFS-S bin. Range: **0**-**86400** (**10**)
qhcvlec1	15-minute CV-L and CV-LFE bin for EC-1. Range: **0**-**16777215 *** (**47**)
daycvlec1	Day CV-L and CV-LFE bin for EC-1. Range: **0**-**2147483647 **** (**448**)
qhcvloc3	15-minute CV-L and CV-LFE bin for OC-3. Range: **0**-**16777215 *** (**140**)
daycvloc3	CV-L and CV-LFE bin for OC-3. Range: **0**-**2147483647 **** (**1344**)
qhcvloc12	15-minute CV-L and CV-LFE bin for OC-12. Range: **0**-**16777215 *** (**560**)
daycvloc12	Day CV-L and CV-LFE bin for OC-12. Range: **0**-**2147483647 **** (**5376**)
qhcvloc48	15-minute CV-L and CV-LFE bin for OC-48. Range: **0**-**16777215 *** (**2240**)
daycvloc48	Day CV-L and CV-LFE bin for OC-48. Range: **0**-**2147483647 **** (**21504**)
qhcvloc192	15-minute CV-L and CV-LFE bin for OC-192. Range: **0**-**16777215 *** (**8960**)
daycvloc192	Day CV-L and CV-LFE bin for OC-192. Range: **0**-**2147483647 **** (**86016**)
qhesl	15-minute ES-L and ES-LFE bin. Range: **0**-**900** (**25**)
dayesl	Day ES-L and ES-LFE bin. Range: **0**-**86400** (**250**)
qhsesl	15-minute SES-L and SES-LFE bin. Range: **0**-**810** (**10**)
daysesl	Day SES-L and SES-LFE bin. Range: **0**-**77760** (**40**)
qhfeccl	15-minute FECC-L OC-192 bin. Range: **0**-**5184000** (**5184**)

Table 3-63. ED-TCA-PROF Input ***spec_block*** Parameters (Sheet 4 of 7)

Parameter Name	Description
dayfeccl	Day FECC-L OC-192 bin. Range: **0**-**497664000** (**497664**)
qhfecul	15-minute FECU-L OC-192 bin. Range: **0**-**2592000** (**2592**)
dayfecul	Day FECU-L OC-192 bin. Range: **0**-**248832000** (**248832**)
qhuasl	15-minute UAS-L and UAS-LFE bin. Range: **0**-**900** (**10**)
dayuasl	Day UAS-L and UAS-LFE bin. Range: **0**-**86400** (**10**)
	The following parameters belong to **PATH** profile type:
qhcvpsts1	15-minute CV-P and CV-PFE bin for STS-1. Range: **0**-**65535 &** (**15**)
daycvpsts1	Day CV-P and CV-PFE bin for STS-1. Range: **0**-**8388607 &&** (**125**)
qhcvpsts3c	15-minute CV-P and CV-PFE bin for STS-3c. Range: **0**-**65535 &** (**25**)
daycvpsts3c	Day CV-P and CV-PFE bin for STS-3c. Range: **0**-**8388607 &&** (**250**)
qhcvpsts12c	15-minute CV-P and CV-PFE bin for STS-12c. Range: **0**-**16777215 *** (**75**)
daycvpsts12c	Day CV-P and CV-PFE bin for STS-12c. Range: **0**-**2147483647 **** (**750**)
qhcvpsts48c	15-minute CV-P and CV-PFE bin for STS-48c. Range: **0**-**16777215 *** (**300**)
daycvpsts48c	Day CV-P and CV-PFE bin for STS-48c. Range: **0**-**2147483647 **** (**3000**)
qhespsts1	15-minute ES-P and ES-PFE bin for STS-1. Range: **0**-**900** (**12**)
dayespsts1	Day ES-P and ES-PFE bin for STS-1. Range: **0**-**86400** (**100**)
qhespsts3c	15-minute ES-P and ES-PFE bin for STS-3c. Range: **0**-**900** (**20**)
dayespsts3c	Day ES-P and ES-PFE bin for STS-3c. Range: **0**-**86400** (**200**)

Table 3-63. ED-TCA-PROF Input ***spec_block*** Parameters (Sheet 5 of 7)

Parameter Name	Description
qhespsts12c	15-minute ES-P and ES-PFE bin for STS-12c. Range: **0**-**900** (**60**)
dayespsts12c	Day ES-P and ES-PFE bin for STS-12c. Range: **0**-**86400** (**600**)
qhespsts48c	15-minute ES-P and ES-PFE bin for STS-48c. Range: **0**-**900** (**240**)
dayespsts48c	Day ES-P and ES-PFE bin for STS-48c. Range: **0**-**86400** (**2400**)
qhsesp	15-minute SES-P and SES-PFE bin. Range: **0**-**810** (**3**)
daysesp	Day SES-P and SES-PFE bin. Range: **0**-**77760** (**7**)
qhuasp	15-minute UAS-P and UAS-PFE bin. Range: **0**-**900** (**10**)
dayuasp	Day UAS-P and UAS-PFE bin. Range: **0**-**86400** (**10**)
qhppjcgen	15-minute PPJC-PGen bin. Range: **0**-**32767** (**30**)
dayppjcgen	Day PPJC-PGen bin. Range: **0**-**2097151** (**2880**)
qhnpjcgen	15-minute NPJC-PGen bin. Range: **0**-**32767** (**30**)
daynpjcgen	Day NPJC-PGen bin. Range: **0**-**2097151** (**2880**)
qhppjcdet	15-minute PPJC-PDet bin. Range: **0**-**32767** (**30**)
dayppjcdet	Day PPJC-PDet bin. Range: **0**-**2097151** (**2880**)
qhnpjcdet	15-minute NPJC-PDet bin. Range: **0**-**32767** (**30**)
daynpjcdet	Day NPJC-PDet bin. Range: **0**-**2097151** (**2880**)
	The following parameters belong to **DS3** profile type:
qhcvl	15-minute CV-L bin. Range: **0**-**16383** (**387**)

Table 3-63. ED-TCA-PROF Input ***spec_block*** Parameters (Sheet 6 of 7)

Parameter Name	Description
daycvl	Day CV-L bin. Range: **0**-**1048575** (**3865**)
qhesl	15-minute ES-L bin. Range: **0**-**900** (**25**)
dayesl	Day ES-L bin. Range: **0**-**86400** (**250**)
qhsesl	15-minute SES-L bin. Range: **0**-**900** (**4**)
daysesl	Day SES-L bin. Range: **0**-**86400** (**40**)
qhcvp	15-minute CV-P and CV-PFE bin. Range: **0**-**16383** (**382**)
daycvp	Day CV-P and CV-PFE bin. Range: **0**-**1048575** (**3820**)
qhesp	15-minute ES-P and ES-PFE bin. Range: **0**-**900** (**25**)
dayesp	Day ES-P and ES-PFE bin. Range: **0**-**86400** (**250**)
dayesap	Day ESA-P and ESA-PFE bin. Range: **0**-**86400** (**250**)
qhesbp	15-minute ESB-P and ESB-PFE bin. Range: **0**-**900** (**25**)
dayesbp	Day ESB-P and ESB-PFE bin. Range: **0**-**86400** (**250**)
qhsesp	15-minute SES-P and SES-PFE bin. Range: **0**-**810** (**4**)
daysesp	Day SES-P and SES-PFE bin. Range: **0**-**77760** (**40**)
qhsasp	15-minute SAS-P and SAS-PFE bin. Range: **0**-**900** (**2**)
daysasp	Day SAS-P and SAS-PFE bin. Range: **0**-**86400** (**8**)
qhuasp	15-minute UAS-P and UAS-PFE bin. Range: **0**-**900** (**10**)

Table 3-63. ED-TCA-PROF Input ***spec_block*** Parameters (Sheet 7 of 7)

Parameter Name	Description
dayuasp	Day UAS-P and UAS-PFE bin. Range: **0**-**86400** (**10**)
	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: Edit User

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 3-64. 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 3-65. 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** 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-USER-SECU: Edit User Security

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-66. 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 from **1** (low) to **5** (high).

Table 3-66. ED-USER-SECU Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	Starting with Release 2.0, 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**. 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 3-67. 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 4.0.1. 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 4.0.1. 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 5. 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.

Table 3-67. ED-USER-SECU Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
page	Password Aging Interval. This parameter is available starting in Release 4. 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***. 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** 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.

Table 3-67. ED-USER-SECU Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
tmout	Inactivity Timeout Period. This parameter is available starting in Release 4. 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**
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 3. 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
;
```

If the ***uid*** is currently logged into any network element when the **ED-USER-SECU** command is successfully executed, regardless of altering any or none of the login parameters, the user session identified by the uid is terminated.

Starting with Release 3.0, if the ***uid*** is currently logged in when the

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-VCG: Edit Virtual Concatenation Group

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-68. 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 5. 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 3-69. 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 5. Values: Alphanumeric string with a maximum of 24 characters. The first character must be a letter. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 5. 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 5. Values: ■ **MON** ■ **NMON** (initial value).
vpm	VCG PM Enable. This parameter is available starting in Release 5. Values: ■ **ENABLE** ■ **DISABLE** (initial value).

Table 3-69. 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 6. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-70. `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**
spec_block	The following table lists the ***spec_block*** parameters.

Table 3-71. `ED-VCGTRIB-rr` *spec_block* Parameters (Sheet 1 of 4)

rr	Parameter Name	Description
STS	***brstintvl***	Bursty Interval (starting in Release 5). Measurement period for determining bursty errors. See ***brstthr***. Values: ■ **2 to 10** (seconds) Initial value: **7** Note - This parameter affects ALL tribs at once of the VCG, but may be applied to any or each of the tribs; the last value will be in effect for all tribs.
STS	***brstthr***	Bursty error Threshold (starting in Release 5). Threshold value for bursty errors. Values (as a percentage): **0** - **100** at increments of 5 Initial value: **30** Note - This parameter affects ALL tribs at once of the VCG, but may be applied to any or each of the tribs; the last value will be in effect for all tribs.

Table 3-71. `ED-VCGTRIB-rr` *spec_block* Parameters (Sheet 2 of 4)

rr	Parameter Name	Description
STS	***degthr***	Path BER Threshold. This parameter is available starting in Release 5. Values (as exponents of 10): ■ **-5** ■ **-6** (initial value **10^{-6}**) ■ **-7** ■ **-8** ■ **-9**. Note - This parameter affects ALL tribs at once of the VCG, but may be applied to any or each of the tribs; the last value will be in effect for all tribs.
STS	***dexcthr***	Excessive Degrade Threshold. This parameter is available starting in Release 5. This is more severe than ***degthr***, the degrade threshold. Values: (as exponents of 10) ■ **-3** (initial value **10^{-3}**) ■ **-4** ■ **-5**. Note - This parameter affects ALL tribs at once of the VCG, but may be applied to any or each of the tribs; the last value will be in effect for all tribs.
STS	***ppm***	Path PM Enable. This parameter is available starting in Release 5.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 5. 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).

Table 3-71. `ED-VCGTRIB-rr` *spec_block* Parameters (Sheet 3 of 4)

rr	Parameter Name	Description
STS	***ptffmcrs***	PTF FM Crossconnect Dependency. This parameter is available starting in Release 5. Values: ■ **YES** (initial value). ■ **NO**
STS	***ptpn***	Path Terminating Alarm Severity Assignment Profile. This parameter is available starting in Release 5. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
STS	***ptrcrfmt***	Starting in Release 5, 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.
STS	***ptrcwfmt***	Starting in Release 5, 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 3-71. `ED-VCGTRIB-rr` *spec_block* Parameters (Sheet 4 of 4)

rr	Parameter Name	Description
STS	***sdsfmode***	Signal Degrade/Signal Fail Mode. This parameter is available starting in Release 5. Values: ■ **POISSON** ■ **BURST** (initial value). Note - This parameter affects ALL tribs at once of the VCG, but may be applied to any or each of the tribs; the last value will be in effect for all tribs.
STS	***tmonmd***	Tributary Monitoring Mode. This parameter is available starting in Release 5. 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 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 3-72. Assignment of ASAP Profiles

pftype	Description
APS	**ED-PROTN-GRP** (1+1 Optical)
BLSR	**ED-PROTN-GRP** (2F)
DRIPATH	**ED-PROTN-GRP**
DS3IN	**ED-T3** (incoming DS3)
DS3OUT	**ED-T3** (outgoing DS3)
DS3OUTSDH	**ED-T3** (outgoing DS3)
ENET	**ED-EPORT**
ENET	**ED-VCG**
ENET	**ED-VCGTRIB**
ENV	**SET-ATTR-ENV**
EQPT	**ED-EQPT**
PT	**ED-VCGTRIB**
PTSDH	**ED-VCGTRIB**
SONET	**ED-OCn**
TIMING	**SET-SYNCN**
TRIBSONET	**ED-STS1**

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 3-73. ENT-ASAP-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.
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) ■ **DS3IN** DS3 Port (input) ■ **DS3OUT** DS3 Port (output), connected to a SONET port ■ **ENET** Ethernet This value is available starting with Release 5 ■ **ENV** Environmental (Miscellaneous Discrete) This value is available starting with Release 5. ■ **EQPT** Equipment ■ **PT** Path terminating, SONET ■ **PTSDH** Path terminating, SDH ■ **SONET** OC-N/EC1 Port

Table 3-73. ENT-ASAP-PROF Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **TIMING** System Timing ■ **TRIBSONET** STS-N(c) SONET 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 3-74. Maximum Profiles for each Profile Type (Sheet 1 of 2)

pftype	Maximum # of profiles
APS	3
BLSR	3
DRIPATH	3
DS3IN	6
DS3OUT	6
ENET	6
ENV	5
EQPT	6
PT	6
PTSDH	6

Table 3-74. Maximum Profiles for each Profile Type (Sheet 2 of 2)

pftype	Maximum # of profiles
SONET	10
TIMING	2
TRIBSONET	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 a **SONET** ASAP profile that is named mysonet:

```
ENT-ASAP-PROF:LT-WBM::123456::sonet,mysonet;

   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-BANNER: Enter Banner

The **ENT-BANNER** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

1.

INPUT FORMAT

ENT-BANNER:*tid*::*ctag*:::*spec_block*;

DESCRIPTION

The **ENT-BANNER** command can be initiated by privileged users to provision a proprietary notice to enhance system security. The intent is to warn potential intruders against illegal intrusion into the system. The length of the provisionable notice can not exceed 420 characters. The maximum allowed number of characters must include 67 required for a standard TL1 header including the 20 characters for TID, 6 for CTAG. A maximum of 11 lines can be entered with no line exceeding 60 characters.

From the legal TL1 characters defined in GR831 Table A-1 only the characters hex 20-7e are allowed.

The "***line***#" parameter allows a user to enter a line of text that must be surrounded by Double Quotation marks, not exceeding 60 characters, where # is any number between 1 and 11. The lines can be entered in any order. If a line needs to be corrected or reentered, the command can be entered with just that line.

Within the body of the text string, a *literal quotation mark* itself is encoded by an *escaped double-quote* - (\"). The *escape character - backslash* (\) - is represented by a double *backslash* - (\\). Literal quotation marks within the body of the text string do not have to be *balanced (paired).* See GR831 A.8.

If the *spec_block* is null, all lines will be set to their default value:

line1	"LUCENT TECHNOLOGIES - PROPRIETARY"
line2	"THIS SOFTWARE CONTAINS INFORMATION OF LUCENT TECHNOLOGIES"
line3	"AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE"
line4	"WITH APPLICABLE AGREEMENTS."
line5	"NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM."
line6	"USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY"
line7	"AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN"
line8	"LUCENT TECHNOLOGIES AND CUSTOMER."
line9	"UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION."
line10	""
line11	""

Table 3-75. Default Values of *spec_block* Parameters

The **ENT-BANNER** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

OUTPUT FORMAT

If the Network Element fully complies with the **ENT-BANNER** request, the following normal completion response is returned:

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

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

OUTPUT PARAMETERS

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 an **ENT-BANNER** command that provisions or modifies the network element's user specified banner:

```
ENT-BANNER:LT-WBM::123456:::line1="This is the line 1 of banner";

   LT-WBM 00-10-26 16:42:11
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-BANNER** command.

RELATED TL1 COMMANDS/MESSAGES

ACT-USER

RTRV-BANNER

NAME

ENT-CRS: Enter Cross Connection

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

3.

INPUT FORMAT

ENT-CRS-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::[*cct*]:
[*spec_block*]:[*state_block*];

ENT-CRS-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*::[*cct*][,*in_aid2*]:[
spec_block]:
[*state_block*];

Starting with Release 5, 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.

To prevent deleting a cross connection that is deemed to be important, a “red line” parameter (*sst*) can be enabled when the cross connection is created via **ENT-CRS**. Alternatively, the cross connection can be red-lined by using the **ED-RDL** command. A red-line condition can be removed by the **ED-RDL** command.

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

INPUT PARAMETERS

Table 3-76. 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: ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)
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 5.0, 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.

Table 3-76. ENT-CRS Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	Starting in Release 5.0, 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** (starting with Release 2) ■ **ADJCTPPROT** (starting with Release 5).
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	The following table contains ***spec_block*** and parameters.
state_block	The next table contains ***state_block*** and parameters.

Table 3-77. ENT-CRS Input *spec_block* Parameters (Sheet 1 of 4)

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.

Table 3-77. ENT-CRS Input *spec_block* Parameters (Sheet 2 of 4)

Parameter Name	Description
	Starting in Release 4.0, 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).
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*.

Table 3-77. ENT-CRS Input *spec_block* Parameters (Sheet 3 of 4)

Parameter Name	Description
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. The maximum number of path protection groups that can have the same name is 192. The maximum number of unique path protection names is 320. The first time a ***ppgname*** is used the path protection group is created. The case of the name is the case of the name given. Each subsequent use of the (case insensitive) ***ppgname*** will result in addition of the cross connection to the same group.
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.

Table 3-77. ENT-CRS Input *spec_block* Parameters (Sheet 4 of 4)

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.

Table 3-78. 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.
sst	Specifies the red line value of the circuit. Values: ■ **YES** ■ **NO** (default).

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 2WAY STS1 BLSR ADD/DROP connection:

```
ENT-CRS-STS1:LT-WBM-789:4-2-#-#-02-2-1,4-2-#-#-08-1-7:123456::2WAY:
RTNOMODE=NORM,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 for a 1WAY STS1 BLSR THROUGH connection:

```
ENT-CRS-STS1: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 STS1 BLSR ADD/DROP connection:

```
ENT-CRS-STS1:LT-WBM-789:4-2-#-#-04-1-1,4-2-#-#-08-4-1:123456:::
RTNOMODE=NORM,LOCA=LT-WBM-345;

   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 STS1 non-BLSR connection:

```
ENT-CRS-STS1: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 shows a successful completion of **ENT-CRS** command for a 1WAY STS1 path-protected connection:

```
ENT-CRS-STS1:LT-WBM-789:1-1-U-#-11-1-1,1-1-F01-EW-02-1-1:123456::1WAYP
PROT,1-1-F01-WW-04-1-1:LOCA=LT-WBM-679,LOCZ=LT-WBM-567
:,YES;

   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.

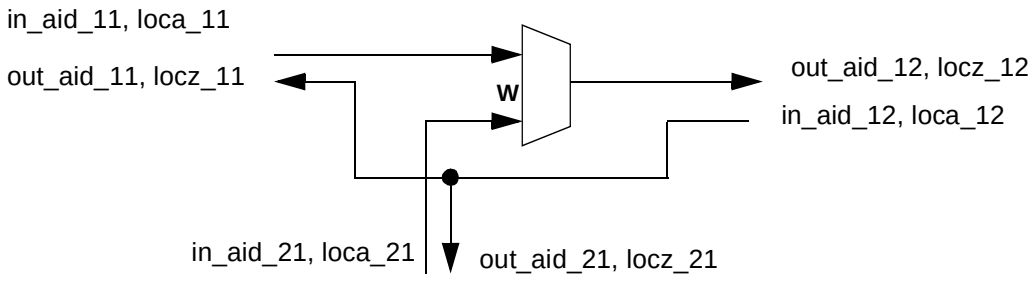


Table 3-79. Drop-and-Continue, BLSR (or MS-SPRing) Primary Node Cross Connections

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**.

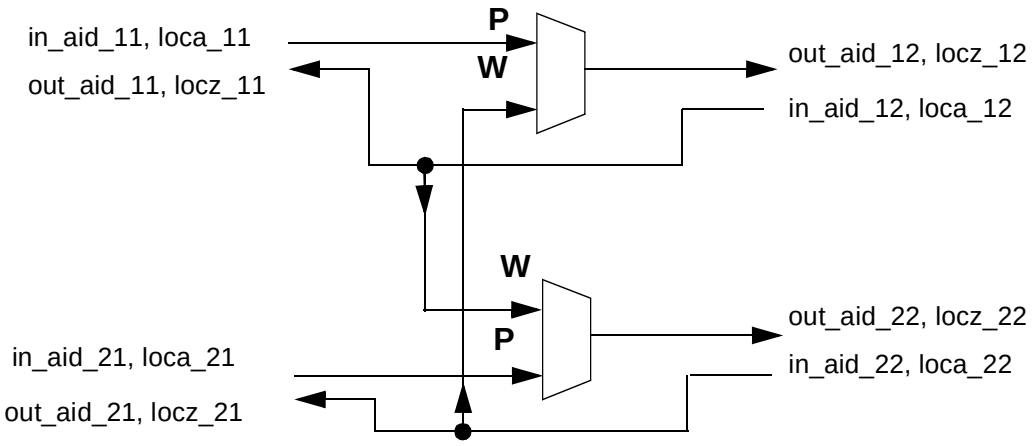


Table 3-80. Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE

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.

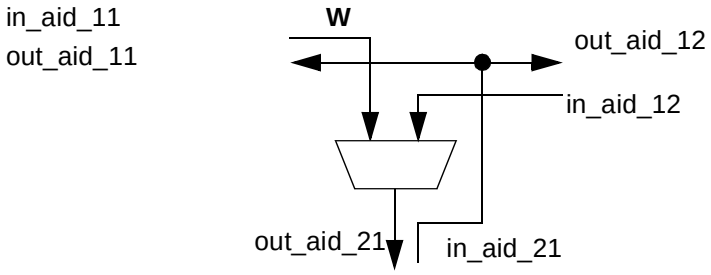


Table 3-81. UPSR (or SNCP Ring) Add, Drop Cross Connections

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**.

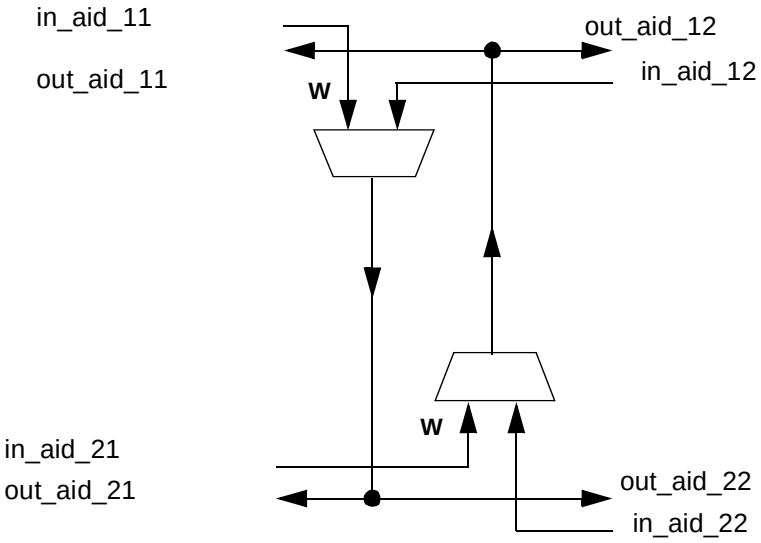


Table 3-82. UPSR (or SNCP Ring) Ring-to-Ring, Single Node Interconnection, Same NE

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-83. 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 3-83. 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 3-84. ENT-EQPT Input *spec_block* Parameters

Parameter Name	Description
eqptpn	Equipment ASAP Profile Name. This parameter is available starting in Release 5. 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 2. 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 2. 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 3. 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 3. This parameter is required when the ***aid*** is an I/O shelf AID. Values: ■ **TYPE2GIO** ■ **TYPE10GIO**.
ssoride	SS Bit Override. This parameter is available starting in Release 6. This parameter is only allowed with an I/O shelf AID, and is used to override normal SS bit provisioning on a per-I/O shelf basis when interworking with non-compliant SONET network elements. Values: ■ **ENABLE** ■ **DISABLE** (Initial value).

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 3-85. Circuit Pack Table (Sheet 1 of 2)

Circuit Pack Name	Circuit Pack Qualifier
GE1	SX2
GE1	LX2
GE1	VLX2
ADJCTL	DCCEI
CTL	SYS50DM
DS3EC1	8
OBA10G	15LR1
OBPA10G	15VR1
OC3STM1	13LR4
OC3STM1	13SR8
OC3STM1	13SR4
OC12STM4	13LR2
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

Table 3-85. Circuit Pack Table (Sheet 2 of 2)

Circuit Pack Name	Circuit Pack Qualifier
OC192STM64	15IRS1
OC192STM64	15SR1
OC192STM64	POU9590, POU9580, POU9570, POU9560, POU9550, POU9540, POU9530, POU9520, POU9490, POU9480, POU9470, POU9460, POU9450, POU9440, POU9430, POU9420, POU9380, POU9370, POU9360, POU9350, POU9340, POU9330, POU9320, POU9310, POU9280, POU9270, POU9260, POU9250, POU9240, POU9230, POU9220, POU9210
OC192STM64	WDM9580, WDM9570, ..., WDM9190
PPROC	STS192
PPROC	STS384
SWITCH	DS3EC1
SWITCH	STS576
SWITCH	STS768
TMG	STRAT3

When name and qualifier are being retrieved, the lower numbered slots associated with a multiple width pack will return EXT for both the name and qualifier.

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

- Illegal Shelf Type
- Illegal Pproc Port ID in this Configuration
- Bad ON Port ID

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

RMV-EQPT

RST-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ENT-FECOM: Enter Far-End Communications

The **ENT-FECOM** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 2.0, the syntax is:

ENT-FECOM:*tid*:*aid*:*ctag*::*port*:[*spec_block*];

Starting in Release 4.0.1, 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 3-86. 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 2. 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 2. 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 4.0.1. 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 3-87. ENT-FECOM Input *spec_block* Parameters (Sheet 1 of 2)

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.

Table 3-87. `ENT-FECOM` Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
dccstat	This parameter is available starting in Release 2. This parameter enables or disables communication over the section DCC channel. Values: ■ **ENABLE** ■ **DISABLE** (initial value). Prior to Release 4.0, the initial value was **ENABLE** if the number of active DCCs was less than the maximum allowed.
lapdmode	LAPD Mode. This parameter is available starting in Release 6. 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 2, this parameter is available for the Section DCC. Starting in Release 4, this parameter is available for the Line DCC.
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 4.0.1, this parameter is available for the Section DCC. Starting in Release 4.0.1, this parameter is available for the Line DCC. Starting in Release 5.0 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-FECOM-LAN: Enter Far-End Communications for LAN

The **ENT-FECOM-LAN** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 4.0, 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 3-88. 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 3-88. ENT-FECOM-LAN Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is applicable starting in Release 2. 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 3-89. ENT-FECOM-LAN Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
extllm	External LAN Max Link Metric. This parameter is applicable starting in Release 4.0.1. This is the maximum value of a routing metric assignable to a circuit. Values: **1**-**63**. The initial value is **14**. Starting from Release 6.0 this paprameter is no longer supported.
extltss	External LAN TARP Storm Suppression. This parameter is available starting in Release 6. Modification of this parameter causes a communications software reset. Values: ■ **ENABLE** (initial value) ■ **DISABLE**
intlanstat	Internal LAN Status. This parameter is applicable starting in Release 4.0.1. This parameter indicates whether communication over the internal LAN (ON-LAN) 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** (initial value) ■ **DISABLE**.

Table 3-89. `ENT-FECOM-LAN` Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
	It is not allowed to disable the ON-LAN interface on the DCC controller of the main shelf; it is only allowable to disable ON-LAN on the DCC controller of shelves.
intllm	Internal LAN Max Link Metric. This parameter is applicable starting in Release 4.0.1. This is the maximum value of a routing metric assignable to a circuit. Values: **1**-**63**. The initial value is **14**. Starting from Release 6.0 this paprameter is no longer supported.
isis_stat	Indicates whether (integrated) IS-IS is enabled or disabled on the LAN port. This parameter is available starting in Release 5.1.11. Note: enabling has no effect if *lanstat* is disabled. Type: alphanumeric value set Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
lanrpri	LAN Designated Router Priority. This parameter is available starting in Release 4.0.1. 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 2. This parameter will reset the LAN hardware without resetting the OSI stack or the system and without affecting communications. Values: ■ **YES** ■ **NO** (initial value). Starting from Release 6.0 this paprameter is no longer supported.

Table 3-89. ENT-FECOM-LAN Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
lanstat	External LAN Status. This parameter is applicable starting in Release 2. This parameter indicates whether communication over the external IAO-LAN channel is enabled or disabled. Values: ■ **ENABLE** (initial value) ■ **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-IP-MAP: Enter TCP/IP map

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5

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 3-90. 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 3-91. `ENT-IP-MAP` Input *spec_block* Parameters

Parameter Name	Description
acid	OS Application Context ID. This parameter is available starting in Release 5. 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 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-92. 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 3-93. `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 6 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 3-93. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-94. 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 3-94. 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 2) 1+1 is for optical protection. ■ **2F** (starting in Release 2)
spec_block	See the following "**ENT-PROTN-GRP *spec_block*** Parameters" table.

Table 3-95. ENT-PROTN-GRP *spec_block* Parameters (Sheet 1 of 3)

Parameter	Description / PROTYPE	Value
apsoride	APS Override. For APS behavior, this overrides the value of *iwtype*. It is only applicable if *protocol* has a value of 1+1_BIDIR. For other values of ***protocol***, ***apsoride*** cannot be modified or retrieved. If ***protocol*** is changed from a value of 1+1_BIDIR, then ***apsoride*** is reset to a value of **NONE**. This parameter is only valid when ***protype*** has a value of **1+1**.	**SONET, SDH, NONE** (initial 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 2).	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**

Table 3-95. `ENT-PROTN-GRP` *spec_block* Parameters (Sheet 2 of 3)

Parameter	Description / PROTYPE	Value
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 2).	 port AID
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 5).	 **1+1_UNI**, **1+1_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 2) Starting in Release 5.0: Starting in Release 6.1.5,	 ASCII string of up to 15 characters from the TID character set 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). The value can only 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).

Table 3-95. ENT-PROTN-GRP *spec_block* Parameters (Sheet 3 of 3)

Parameter	Description / PROTYPE	Value
rme	Revertive Mode Enable. This parameter is applicable to the following ***protype(s)***: ■ **1+1** (starting in Release 5).	**ENABLE**, **DISABLE**
west	West Group Member.	See *east*.
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 2).	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 **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.

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 is not allowed on a red-lined cross connection is unless the red-line value is changed to ‘no’ prior to executing **ENT-ROLL** command.

The **ENT-ROLL** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-96. `ENT-ROLL` Input Parameters

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the enter roll command is to act. Values: ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)
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. Starting from Release_6.0, 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 3-97. `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. Starting from Release_6.0, it is not allowed to assign a vcgtrib_aid value to this parameter.

Table 3-97. 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 4.0, 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 3-97. 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-STS1:LT-WBM-789:4-2-#-#-02-1-1,4-2-#-#-06-1-1:123456:::NEWINA
ID=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-STS1:LT-WBM-789:2-1-#-#-14-2-2,1-1-#-#-6-2-1:123456:::NEWINAI
D=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 **Equipage, Red-Lined Circuit** error response is shown below:

```
   sid date time
M  ctag DENY
   ERLC
   /* Equipage, Red-Lined Circuit */
;
```

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

- Attempt to roll a red-lined cross 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).

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 5.0, 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 3-98. 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: ■ **DS3** ■ **ENET** ■ **PATH** ■ **PHYSICAL** ■ **SECTION-LINE**.
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 “NotReported.” Default contains non-zero threshold value for each parameter in the profile, and NotReported 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 5.0, 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 3-99. 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 3-99. ENT-ULS Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	This parameter is available starting in Release 2. 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 3-100. ENT-ULS Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
ip_ad	IP Address. This parameter is available starting in Release 5. 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 5. 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 5. 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 3-100. 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 5. 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 5. 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 5. 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-STM::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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 5.0, 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 3-101. 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 3-102. 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 2. 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 3-103. ENT-ULSDCC-L3 Input *spec_block* Parameters (Sheet 1 of 3)

Parameter Name	Description
l3area	NSAP Area Identifier Field. This parameter is available starting with Release 2. 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 hexa-decimal) value with the initial value of **0000** hex.
l3dfi	NSAP DSP (Domain Specific Part) Format Identifier. This parameter is available starting with Release 2. 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.

Table 3-103. `ENT-ULSDCC-L3` Input *spec_block* Parameters (Sheet 2 of 3)

Parameter Name	Description
l3isct	Intermediate System Configuration Timer. This parameter is available starting with Release 2. 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 6.0 this parameter is no longer supported to improve the connectivity robustness.
l3isisnl	This parameter is available starting in Release 5. 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
l3lc	CLNP Lifetime Control parameter. This parameter is available starting with Release 3. 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 6.0 this parameter is no longer supported to improve the connectivity robustness.
l3lv2is	This parameter is available starting in Release 2. 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 5.0 the parameter ***l3lv2is*** is replaced by ***l3isisnl***

Table 3-103. ENT-ULSDCC-L3 Input *spec_block* Parameters (Sheet 3 of 3)

Parameter Name	Description
l3org	NSAP Organization Identifier Field. This parameter is available starting with Release 2. 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.
l3rd	NSAP Routing Domain. This parameter is available starting with Release 2. 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 2. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 5.0, 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 3-104. 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 2. 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 3-105. ENT-ULSDCC-L4 Input Parameters (Sheet 1 of 4)

Parameter Name	Description
l4ajarea	NSAP Area Identifier field of the TARP adjacent network element. This parameter is available starting in Release 2. 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.
l4ajdfi	NSAP DSP (Domain Specific Part) Format Identifier of the TARP adjacent network element. This parameter is available starting in Release 2. This is a 1 octet (2-digit hex) field to specify the format for the rest of the address. The initial value is **80** hex.

Table 3-105. `ENT-ULSDCC-L4` Input Parameters (Sheet 2 of 4)

Parameter Name	Description
l4ajorg	NSAP Organization Identifier field of the TARP adjacent network element. This parameter is available starting in Release 2. 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 2. 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 2. 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.
l4ajsys	NSAP System Identification field of the TARP adjacent network element. This parameter is available starting in Release 2. 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 2. 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 2. 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 3-105. ENT-ULSDCC-L4 Input Parameters (Sheet 3 of 4)

Parameter Name	Description
l4etclp	This parameter is available starting in Release 2. 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 6.0 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 5. Changing this parameter will result in a communications software reset. Values: ■ **ENABLE** ■ **DISABLE**. The initial value is **DISABLE**. 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 2. 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 2. Changing this parameter will result in a communications software reset. Values: ■ **ENABLE** ■ **DISABLE**.

Table 3-105. ENT-ULSDCC-L4 Input Parameters (Sheet 4 of 4)

Parameter Name	Description
	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 2. 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 2. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 2.0, 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 3-106. 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 3-106. 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 from **1** (low) to **5** (high). Starting with Release 2.0, 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**. Note: '**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 3-107. ENT-USER-SECU Input *spec_block* Parameters (Sheet 1 of 2)

Parameter Name	Description
initobs	Initialization Observability. This parameter is available starting in Release 3. 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 4. 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** and **REPT EVT** messages.

Table 3-107. ENT-USER-SECU Input *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **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. ■ **OWN** Responses to the user's own commands (initial value). User will receive no other notifications. Starting with Release 2.0, 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 4. 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 3. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-108. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

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

Starting in Release 5.1, the syntax is:

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.

Also, the internal buffering of autonomous messages for retrieval by **RTRV-AO** is unaffected.

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 3-109. 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-AO

RTRV-ATTR-MSG

NAME

INIT-EQPT: Initialize Equipment

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

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

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.

The **INIT-EQPT** command generates a **REPT DBCHG** message. There are no unique state change notifications associated with the **INIT-EQPT** command. There are, however, all the state change notifications associated with the subsequent restart. For example, there will be two operational state change notifications for a reset controller (one transition to disabled, one transition back to enabled).

INPUT PARAMETERS

Table 3-110. INIT-EQPT 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.

Table 3-110. `INIT-EQPT` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	For NCC, this command is valid only if the ***tid*** is of an NCC located in slot 1 or slot 2 of the shelf, and this command is used to reset other NCC residing in a different slot.
aid	Access Identifier. Identifies the circuit pack that is to be initialized. Values: shelf AID or complex AID or circuit pack AID. See the AID table in OSEG Appendix A. For the NCC, the ***aid***:=(**1|**...|**9**). If ***aid*** selects itself, then command is denied. That is, the "special NCC" can reset other NCCs, but not itself. This command is valid only if the ***tid*** is of an NCC located in slot 1 or slot 2 of the shelf, and this command is used to reset other NCC residing in a different slot.
ctag	Correlation Tag. Refer to **`RTRV-HDR`** for the input parameter syntax and description of this parameter.

For a shelf AID, both duplex shelf controllers are reset. For a system controller shelf, this includes both system controller or both system controller complexes (which includes the associated extension packs CSIEX and CTL/EI). For a subrack controller shelf, this includes both subrack controller packs.

For a circuit pack AID, the addressed pack is reset. If the board addressed by the AID is a system controller complex pack, then the command will be denied since the complex AID must be used. If, however, the board is simply a system controller, and there is no control complex, then the command with the AID will be accepted. COMPLD is returned after the pack or packs have been reset, but before initialization is complete. The only exception to this is any reset involving the active system controller or active system controller complex. In this case, the COMPLD is returned prior to the reset of the active system controller/complex. In all cases, the COMPLD is returned before initialization is complete.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

The output parameters included in the normal completion response are specified in the **OUTPUT PARAMETERS** section for 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-111. 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: ■ **T3** ■ **EC1** ■ **ENET**

Table 3-111. `INIT-REG` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **OC3** ■ **OC12** ■ **OC48** ■ **STS1** ■ **STS3C** ■ **STS12C** ■ **STS48C**
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. Range is supported up to system or shelf level.
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 3-112. `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) ■ **SECTION-LINE** ■ **PATH** ■ **DS3** ■ **ENET**

Table 3-112. `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**.
dirn	Direction Of Monitoring. This parameter is applicable only when ***parm*** is **DS3**. Values: ■ **IN** Incoming PM data to the DS3 facility will be reset. ■ **OUT** Outgoing PM data from the DS3 facility will be reset. ■ **PTF** This parameter indicates terminated SONET/ SDH path PM profile. It will be reported only when the profile type is “path” or “HOVC path”. ■ **ALL** All directions will be reset (default). If the value is omitted, the default value is used.
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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-113. `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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-114. 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 3-114. 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 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 5.0 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 3-115. OPR-LPBK Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate or port type on which the operate loopback command is to act. Values: ■ **T3** ■ **EC1** ■ **OC3** ■ **OC12** ■ **OC48** ■ **1GE** Only far-side loopback is supported. ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)
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.

Table 3-115. OPR-LPBK Input Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following table for the ***spec_block*** input parameters.

Table 3-116. 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 an STS1 cross-connect loopback with forced command execution mode:

```
OPR-LPBK-STS1: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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 5.0, **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 3-117. ***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 3-118. 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 3-118. 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 2) ■ **2F**: port AID (starting in Release 2) ■ **EQPTTMG**: circuit pack AID ■ **EQPTSWFBR**: circuit pack AID ■ **PATHDRI:** input tributary AID (starting in Release 5). 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 5). ***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 aplhanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. This parameter must be included in quotes. 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***.
protype	Protection Type. Values: ■ **1+1** (starting in Release 2)

Table 3-118. `OPR-PROTNSW` Input Parameters (Sheet 3 of 3)

Parameter Name	Description
	■ **2F** (starting in Release 2) ■ **PATHDRI** (starting in Release 3) All constituents of the protection group will be switched. ■ **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(s) 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 2) Starting in Release 5.0, 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). Starting in Release 6.1.5, the value can only 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 3-119. `OPR-PROTNSW` *spec_block* Parameters (Sheet 1 of 3)

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***:	
	■ **1+1** (starting in Release 2)	**LOCKOUT**, **FRCD**, **MAN**
	■ **2F** (starting in Release 2)	**LOCKOUT**, **FRCD**, **MAN**
	■ **PATHDRI** (starting in Release 3)	**LOCKOUT**, **FRCD**, **MAN**
	■ **CONSTITUENTPATH** (starting in a Release 5)	**LOCKOUT**, **FRCD**, **MAN**
	■ **1xNELEC**	**LOCKOUT**, **FRCD**, **MAN**
	■ **EQPTSWFBR** or **EQPTIOFBR**	**FRCD**, **MAN**
	■ **EQPTTMG** Starting with Release 4.0, **FRCD** no longer applies for **EQPTTMG**.	**MAN**

Table 3-119. `OPR-PROTNSW` *spec_block* Parameters (Sheet 2 of 3)

Parameter	Description/PROTYPE	Value
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 2)	**WKG**, **PROTN**
	For ***sc***=LOCKOUT, ***dest*** must be PROTN.	
	■ **2F** (starting in Release 2)	**WKG**, **PROTN**
	■ **PATHDRI** (starting in Release 3)	**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-PROT-NSW** 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***:	

Table 3-119. `OPR-PROTNSW` *spec_block* Parameters (Sheet 3 of 3)

Parameter	Description/PROTYPE	Value
	■ **1+1** (starting in Release 2)	port AID
	■ **2F** (starting in Release 2)	port AID
	■ **PATHDRI** (starting in Release 3).	logical tributary AID
	Starting in Release 5, 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 5, 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 ***prototypes***:	
	■ **1xNELEC**	circuit pack AID
	■ **EQPTTMG**	circuit pack AID
	■ **EQPTSWFBR**	circuit pack AID
destside	Destination. If a value is specified for ***dest***, then ***destside*** is required for the following ***prototypes***; otherwise, it is not allowed:	
	■ **2F** (starting in Release 2)	**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 2)	**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 3-120. Protection Switching Parameters for Rings

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.
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 cases LS-R, LS-S and LP-A are shown for completeness, but are currently not supported.
4. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-121. OPR-SYNCNSW Input Parameters (Sheet 1 of 3)

Parameter Name	Description	
modifier	Values:	
	■ **REF**	Specifies the system assigned timing reference switch
	■ **MOD**	Specifies the system clock mode switch.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.	

Table 3-121. `OPR-SYNCNSW` Input Parameters (Sheet 2 of 3)

Parameter Name	Description
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. ■ **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 applies to the **REF** and **MOD** 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. ■ **MAN** Manual switch. This applies to the **REF** modifier only. 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 2, this parameter can also have value: ■ **LINE1**.

Table 3-121. OPR-SYNCNSW Input Parameters (Sheet 3 of 3)

Parameter Name	Description
	Starting with Release 4, this parameter can also have value: ■ **LINE2**. Starting with Release 5, this parameter can also have values: ■ **LINE3** ■ **LINE4** ■ **LINE5** ■ **LINE6**.

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: Report Alarm

The **REPT ALM** autonomous message is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 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 3-122. 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 ■ T3 — A facility-related event at the DS-3 level ■ 1GE — An event at the 1 gigabit ethernet level (Starting in Release 5). ■ VCG — An event on a virtual concatenated group (Starting in Release 5) ■ T1 — A timing reference event at the DS-1 level ■ EC1 — A facility-related event at the electrical carrier signal level 1 (starting in Release 3) ■ OC3 — A facility-related event at the optical carrier signal level 3 (starting in Release 2) ■ OC12 — A facility-related event at the optical carrier signal level 12 (starting in Release 2) ■ OC48 — A facility-related event at the optical carrier signal level 48 ■ OC192 — A facility-related event at the optical carrier signal level 192 (starting in Release 3)

Table 3-122. REPT ALM Output Parameters (Sheet 2 of 3)

Parameter Name	Description
	■ STS1 — A facility-related event at synchronous transport signal level 1 ■ STS3C — A facility-related event for a concatenated STS3 signal (starting in Release 2) ■ STS12C — A facility-related event for a concatenated STS12 (starting in Release 3) ■ STS48C — A facility-related event for a concatenated STS48 (starting in Release 4)
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).

Table 3-122. REPT ALM Output Parameters (Sheet 3 of 3)

Parameter Name	Description
thlev	Threshold Level (starting in Release 4.0.1). 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.
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 OC48. The notification code (alarm level) is critical and it is service affecting.

```
   LT-WBM 01-08-15 08:00:00
*C 126 REPT ALM OC48
   "1-1-u-#-03-1:CR,LOS,SA,01-01,07-29-13:\"Communications, OC48 port,
Loss Of Signal\""
;
```

This example illustrates **REPT ALM** reporting the clearing of an alarm.

```
   LT-WBM 01-08-15 08:00:00
A  129 REPT ALM OC48
  "1-1-u-#-03-1:CL,LOS,SA,01-01,07-29-13:\"Communications, OC48 port,
Loss Of Signal-cleared\""
;
```

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT EVT

REPT SW

RTRV-ALM

RTRV-COND

RTRV-HDR

SET-SYNCN

NAME

REPT ALM ENV: Report Alarm Environment

The **REPT ALM ENV** autonomous message is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-123. 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 DBCHG: Report Database Change

The **REPT DBCHG** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-124. 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 3-124. 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

RTRV-AO

NAME

REPT EVT: Report Event

The **REPT EVT** autonomous message is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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.

Autonomous Performance Monitoring (PM) Threshold Crossing Alert (TCA) messages are provided to the OS using the **REPT EVT** TL1 message.

The TCA is a transient - it is reported when the threshold is crossed. Because it is transient, there is no report when it clears. If the error rate persists long enough so that an HBER results in addition to the transient TCA, then an HBER alarm will be set.

The alarm level of a TCA is not provisionable. It is always NA (not alarmed) which implies TCA messages are always reported via **REPT EVT**.

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 5, **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 3-125. REPT EVT Output Parameters (Sheet 1 of 4)

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: ■ COM — Common. An event that applies to the whole network element system, for example, a processing error. ■ EQPT — An equipment-related event ■ T3 — A facility-related event at the DS-3 level ■ T1 — A timing reference event at the DS-1 level ■ EC1 — A facility-related event at the electrical carrier signal level 1 (starting in Release 3) ■ 1GE — An event at the 1 gigabit ethernet level (Starting in Release 5) ■ VCG — An event on a virtual concatenated group (Starting in Release 5) ■ OC3 — A facility-related event at the optical carrier signal level 3 (starting in Release 2) ■ OC12 — A facility-related event at the optical carrier signal level 12 (starting in Release 2) ■ OC48 — A facility-related event at the optical carrier signal level 48 ■ OC192 — A facility-related event at the optical carrier signal level 192 (starting in Release 3) ■ STS1 — A facility-related event at synchronous transport signal level 1 ■ STS3C — A facility-related event for a concatenated STS3 signal (starting in Release 2) ■ STS12C — A facility-related event for a concatenated STS12 (starting in Release 3)

Table 3-125. REPT EVT Output Parameters (Sheet 2 of 4)

Parameter Name	Description
	■ STS48C A facility-related event for a concatenated STS48 (starting in Release 4)
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. 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*.

Table 3-125. REPT EVT Output Parameters (Sheet 3 of 4)

Parameter Name	Description
	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. 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.

Table 3-125. REPT EVT Output Parameters (Sheet 4 of 4)

Parameter Name	Description
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.
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 OC-48 Loss of Signal (LOS) could be reported if the notification code was previously provisioned to 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 OC48
   "1-1-u-#-01-1:LOS,SC,01-01,07-59-59:\"Communications, OC48 port, Loss
Of Signal\""
;
```

The following **REPT EVT** autonomous message reports that the LOS cleared. For this case, the condition effect is CL (clear):

```
   LT-WBM 01-08-15 08:11:05
A  004 REPT EVT OC48
   "1-1-u-#-01-1:LOS,CL,01-01,08-11-04:\"Communications, OC48 port, Loss
Of Signal-cleared\""
;
```

The following **REPT EVT** autonomous message reports an STS-1 SES TCA for slot 14 port 3 STS-12. Comments about specific parameters:

- *condeff* All TCAs are Transient Conditions (TC).
- *monval* 250 errors were detected.
- *thlev* The threshold is 250.

- *tmper* The TCA time period is 1 day.

```
   LT-WBM 01-08-15 08:00:00
A  009 REPT EVT STS1
   "1-1-u-#-14-3-2:T-SESP,TC,01-01,07-59-59,,,250,250,1-DAY:\"Quality
of service, STS1 CS, TCA\""
;
```

The following **REPT EVT** autonomous message reports a DS-3 UAS TCA for circuit pack 10 port 2:

```
   LT-WBM 01-08-15 08:11:05
A  010 REPT EVT T3
   "1-1-u-#-10-2:T-UASP,TC,01-01,08-11-04,,,12,10,15-MIN:\"Quality of
service, DS3 port, TCA\""
;
```

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

RTRV-ALM

RTRV-COND

RTRV-HDR

NAME

REPT-EVT-FXR: Is an autonomous message that is used to report remote file transfer activities.

This message is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.1.11

DESCRIPTION

After the initial response to the **CPY-RFILE** command by the NE, the autonomous message must be used to communicate any kind of event. So, if the connection or file transfer fails, the autonomous message must be sent with a failure indication. Once the file has been completely downloaded, the autonomous message must then be sent with a successful indication.

Reasons of transmit failure - External communication failure

If the command failed due to an external communications failure.

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

- External communication failure
- Unsuccessful file transfer

Reasons of transmit failure - Transferred file is invalid

If the transferred file is deemed invalid for miscalleneous reasons such as incorrect checksum, invalid control information, etc., the system shall respond with *fxfr_rslt*=FAILURE.

Reasons of transmit failure - Generic not available

If the command failed because the generic is not available, the system shall respond with *fxfr_rslt*=FAILURE. The following condition will cause this error response: Not a software generic file.

Reasons of transmit failure - Directory not accessible

If a directory is specified that cannot be found or cannot be accessed due to improper privileges, the system shall respond with *fxfr_rslt*=FAILURE.

Reasons of transmit failure - Product mismatch

If the command failed due to a product mismatch in a retrieved file (file does not belong to NE type), the system shall respond with *fxfr_rslt*=FAILURE.

OUTPUT FORMAT

The general format of a **REPT-EVT-FXFR** autonomous message is as follows:

```
   sid date time
A  atag REPT EVT FXFR
   "filename,fxfr_status[,fxfr_rslt][,bytes_xfrd]";
```

OUTPUT PARAMETERS

Command parameters

Table 3-126. REPT-EVT-FXFR Output Parameters

Parameter Name	Description
atag	Automatic tag. Refer to **REPT-ALM** message.
filename	Identifies the name of the file transferred. *Type*: text string *Range*: 1 to 128 characters.
fxfr_status	Indicates the file transfer status. *Type*: alphanumeric value set *Range*: ■ **START**, indicates file transfer has started ■ **IP**, indicates file transfer is In-Progress (optional) ■ **COMPLD**, indicates file transfer has completed.
fxfr_rslt	Indicates success or failure of the file transfer. This parameter is only displayed when the file transfer has completed (when *fxfr_status* is COMPLD). *Type*: alphanumeric value set *Range*: ■ **SUCCESS**, indicates successful file transfer ■ **FAILURE**, indicates failed file transfer.
fxfr_xfrd	Number of bytes transferred for IP and total number of bytes for COMPLD. *Type*: alphanumeric value set

EXAMPLE INPUT/OUTPUT

The following example shows an autonomous message **REPT-EVT-FXFR** for starting a file transfer.

```
   LT-WBM 01-08-15 08:00:00
A  003 REPT EVT FXFR
   "/WBM/release5,START,8051"
;

  LT-WBM 01-08-15 08:00:00
A  003 REPT EVT FXFR
   "/WBM/release5,IP,2000"
;

  LT-WBM 01-08-15 08:00:00
A  003 REPT EVT FXFR
   "/WBM/release5,COMPLD,SUCCESS,8051"
;
```

RELATED TL1 MESSAGES

APPLY

CPY-RFILE

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

RTRV-NE

ED-NE

NAME

REPT EVT SESSION: Report Event Session

The **REPT EVT SESSION** autonomous message is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

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 5.0, 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 3-127. `REPT EVT SESSION` Output Parameters

Parameter Name	Description
spec_block	*sysavst* System Availability Status. This parameter is available starting in Release 4.0.1. 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 SW: Report Switch

The **REPT SW** autonomous message is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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.

Starting in Release 6.1.5, the **REPT EVT** message is used to report 1+1 equipment protection switch state changes. The fact that a change of active unit has took place is indicated by *condtype* parameter (*condtype*==PS: active unit changed, *condtype*==GP: no active unit change). When a change in active unit took place additionally the **REPT SW** message is reported.

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)
;
```

Starting in Release 6.1.5, the general format of a **REPT SW** message is as follows:

```
   tid date time
A  atag REPT SW
   "actid,stbyid"
   (1 or more lines of the above)
;
```

OUTPUT PARAMETERS

Table 3-128. REPT SW Output Parameters

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.
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.
stbyid	Standby Identifier. This parameter is available starting in Release 6.1.5. This is the circuit pack AID of the equipment that was placed in the standby 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"
;
```

Starting in Release 6.1.5, the following example shows a **REPT SW** message:

```
LT-WBM 01-08-15 08:00:00
A  001 REPT SW
   "sc-1-#-#-tmg0-cp,sc-1-#-#-tmg1-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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-129. 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 3-129. RLS-EXT-CONT Input Parameters

Parameter Name	Description
dur	Duration. This parameter is available starting in Release 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

1.

INPUT FORMAT

RLS-LPBK[-*modifier*]:*tid*:*aid*:*ctag*[::,,,*lpbktyp*];

Starting in Release 5.0 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 5.0 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 3-130. 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: ■ **T3** ■ **EC1** ■ **OC3** ■ **OC12** ■ **OC48** ■ **1GE** Only near-side loopback is supported. ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)
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 an STS-1 tributary:

```
RLS-LPBK-STS1: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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 5, **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 3-131. *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 tributaries of the path protection group.			

The **RLS-PROTNSW** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-132. 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 3-132. `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 2) ■ **2F**: port AID (starting in Release 2) ■ **EQPTSWFBR** or **EQPTIOFBR**: circuit pack AID Starting with Release 4.0, **EQPTTMG** no longer applies to **`RLS-PROTNSW`**. ■ **PATHDRI** Input tributary AID (starting in Release 5). 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 5). 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 alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. This parameter must be included in quotes. 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***.
protype	Protection Type. Values: ■ **1+1** (starting in Release 2)

Table 3-132. `RLS-PROTNSW` Input Parameters (Sheet 3 of 3)

Parameter Name	Description
	■ **2F** (starting in Release 2) ■ **PATHDRI** (starting in Release 3) 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 2) Starting in Release 5.0, 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). Starting in Release 6.1.5, the value can only 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 3-133. `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 2)	**CLEAR**
	■ **2F** (starting in Release 2)	**CLEAR**
	■ **PATHDRI** (starting in Release 3)	**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**
	■ **EQPTSWFBR**, or **EQPTIOFBR**. Starting with Release 4.0, **EQPTTMG** no longer applies to **`RLS-PROTNSW`**.	**CLEARFRCD**
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 2)	**EAST**, **WEST**
destaid	Destination Entity AID. This parameter is applicable to the following ***protype(s)***:	
	■ **1xNELEC**. ***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.	circuit pack AID

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-134. RLS-SYNCNSW Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Values: ■ **REF** This specifies the system-assigned timing reference switch. ■ **MOD** This specifies the system clock mode switch.
tid	Target Identifier. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter.

Table 3-134. RLS-SYNCNSW 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.
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 2, this parameter can also have value: ■ **LINE1**. Starting with Release 4, this parameter can also have value: ■ **LINE2**. Starting with Release 5, this parameter can also have values: ■ **LINE3** ■ **LINE4** ■ **LINE5** ■ **LINE6**.

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

RMV-EQPT: Remove Equipment

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

RMV-EQPT:*tid*:*aid*:*ctag*:::*spec_block;*

DESCRIPTION

The **RMV-EQPT** command makes a circuit pack unavailable.

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

INPUT PARAMETERS

Table 3-135. RMV-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. Values: circuit pack AID. See the AID table in OSEG Appendix A.
ctag	Correlation Tag. Refer to **RTRV-HDR** command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RMV-EQPT** 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** command.

EXAMPLE INPUT/OUTPUT

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

```
RMV-EQPT:LT-WBM:2-1-#-#-01-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 **RMV-EQPT** command. The following additional error response is applicable.

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:

- Cp Already Removed.

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ED-STATE-EQPT

ENT-EQPT

RST-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

RST-EQPT: Restore Equipment

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

The **RST-EQPT** command restores the availability of a circuit pack.

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

INPUT PARAMETERS

Table 3-136. RST-EQPT 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: 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 **RST-EQPT** command 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** command.

EXAMPLE INPUT/OUTPUT

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

```
RST-EQPT:LT-WBM:2-1-#-#-01-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 **RST-EQPT** command.

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:

- Cp is failed.

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ED-STATE-EQPT

ENT-EQPT

RMV-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

RTRV-ABN: Retrieve ABN Status

The **RTRV-ABN** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

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 3-137. 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 3-138. RTRV-ABN Output Parameters (Sheet 1 of 2)

Parameter Name	Description
outaid	AID. Values: A protection group AID, logical tributary AID, or port AID. See the AID table in OSEG Appendix A.
reasonstr	Reason string. This is a string of printable characters, surrounded by backslashed double quotes (\").

Table 3-138. RTRV-ABN Output Parameters (Sheet 2 of 2)

Parameter Name	Description
	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\" 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: Retrieve Alarm

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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.

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 3-139. 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 5, 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 5, ***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 5, a value for ***condtype*** may be specified. See OSEG Appendix A for details.

Table 3-139. 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 5, 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 3-140. 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; for example, a processing error. ■ EQPT — An equipment-related event ■ T3 — A facility-related event at the DS-3 level ■ T1 — A timing reference event at the DS-1 level ■ 1GE — An event at the 1 gigabit ethernet level (Starting in Release 5). ■ VCG — An event on a virtual concatenated group (Starting in Release 5) ■ EC1 — A facility-related event at the electrical carrier signal level 1 (starting in Release 3) ■ OC3 — A facility-related event at the optical carrier signal level 3 (starting in Release 2) ■ OC12 — A facility-related event at the optical carrier signal level 12 (starting in Release 2) ■ OC48 — A facility-related event at the optical carrier signal level 48 ■ OC192 — A facility-related event at the optical carrier signal level 192 (starting in Release 3) ■ STS1 — A facility-related event at synchronous transport signal level 1 ■ STS3C — A facility-related event for a concatenated STS3 signal (starting in Release 2) ■ STS12C — A facility-related event for a concatenated STS12 (starting in Release 3)

Table 3-140. `RTRV-ALM` Output Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ STS48C A facility-related event for a concatenated STS48 (starting in Release 4)
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,OC48:CR,LOS,SA,01-01,07-29-13:\"Communications, OC48
port, Loss Of Signal\""
   "1-1-u-#-05-8,T3:CR,LOF,SA,12-31,18-26-14:\"Communications,DS3
port, Loss Of Frame\""
   "1-1-u-#-01-3,T3:MJ,T-BERL,SA,12-31,03-50-32:\"Communications, DS3
port, Bit Error Rate\""
;
```

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 EVT

RTRV-ALM-ENV

RTRV-ASAP-PROF

RTRV-COND

RTRV-FLT-STATE

RTRV-HDR

NAME

RTRV-ALM-ENV: Retrieve Alarm Environment

The **RTRV-ALM-ENV** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ALM-ENV:*tid*:[*aid*]:*ctag*::[*ntfcncde*];

Starting in Release 6.0, 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 3-141. `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 3-142. 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-NTWK: Retrieve alarm network

The **RTRV-ALM-NTWK** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ALM-NTWK:*tid*::*ctag*;

DESCRIPTION

The **RTRV-ALM-NTWK** command retrieves alarm information for all network elements that are in the same alarm group as the network element for which this command was issued and which have their remote network element status enabled (*rnestat* = ENABLE). See **ED-NE-RNES** for a description of the remote alarming feature.

A user can do a remote login to a WaveStar network element from a different alarm group than the NE to which the CIT is currently connected, and retrieve the alarm information for all network elements in that alarm group.

At most, there is one output *alarm* line per remote network element and for each network element it corresponds to the highest alarm level that is present. In addition to the report of an alarm, for each network element environmental/MDI alarms may also be reported. If the remote network element has no alarm set (regular or environmental), then there is no output pertaining to that network element.

If the **RTRV-ALM-NTWK** command is issued for a (local) network element which has the RNES application disabled, then an error response is issued. To avoid the error message, a user has the option to first issue the **RTRV-NE-RNES** command for the local network element to find out about the RNES status.

The **RTRV-NE-RNES** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-143. RTRV-ALM-NTWK 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 response to a valid **RTRV-ALM-NTWK** request is as follows:

```
   sid date time
M  ctag COMPLD
   ":ntfcncde,ocrdat,ocrtm,tid"
   (0 or more lines of the above)
   ":ENV,ocrdat,ocrtm,tid,almmsg"
   (0 or more lines of the above, for ntfcncde=ENV)
;
```

Applicable output lines are ordered as follows:

1. Alarms are reported from greatest to least severity (CR, MJ, MN, ABN, NE-ACTY, ENV).
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.
3. ENVironmental/MDI alarms are reported last. If there are multiple ENVironmental/MDI alarms for a tid, they are sorted by occurrence (see rule-2).

For all non-environmental/MDI alarms, there is a most one output line per remote network element and it corresponds to the highest alarm level that is present. If the remote network element has no alarm set, then there is no output pertaining to that network element.

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-NTWK** command.

Table 3-144. RTRV-ALM-NTWK Output Parameters

Parameter Name	Description
almmsg	Alarm message. It is a quoted string. This field is only use if *ntfcncde* is equal to ENV.
ntfcncde	Notification Code. This is the alarm level. Values: • CR Critical alarm • MJ Major alarm • MN Minor alarm • ABN Abnormal • NE-ACTY Near-end activity • ENV ENVironmental/MDI alarms. ABN and NE-ACTY will not appear for PF-3000 products, but may appear if other products are connect to the network. ENV will only appear for 2.5G products, and will also only be displayed by 2.5G products.
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).
tid	Target Identifier. This gives the target identifier of network element for which the report is being generated.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-NE-RNES:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   ":CR,01-01,07-29-13,abcdefgh1"
   ":CR,12-31,18-26-14,abcdefgh2"
   ":MJ,01-01,07-29-17,abcdefgh3"
   ":MN,01-01,07-30-13,abcdefgh4"
   ":ENV,12-31,23-59-59,abcdefgh2,\"SmokeAlarm\""
;
```

ERROR RESPONSES

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

If an **RTRV-ALM-NTWK** request is entered and the remote network element status is disabled (*rnestat*) , then the following error response is given:

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

RELATED TL1 MESSAGES

ED-NE-RNES

RTRV-NE-RNES

NAME

RTRV-AO: Retrieve Autonomous Output

The **RTRV-AO** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-AO:*tid*::*ctag*[:::*spec_block*];

DESCRIPTION

The **RTRV-AO** command requests copies of past TL1 autonomous messages for users in the Memory Administration user class.

The copies of autonomous TL1 messages available for retrieval include those actually reported to the user as well as those that may not have reached the user due to external (for example, X.25 failures) or internal (for example, inhibited autonomous TL1 message reporting) conditions. If messages are inhibited with the **INH-MSG** command, the internal buffering of autonomous messages is unaffected.

The system saves a copy of each autonomous TL1 message to which an ***atag*** value is assigned, for users in the Memory Administration user class. That is, if more than one user of the Memory Administration user class is logged in, those logins will share the same **RTRV-AO** buffer.

If the ***spec_block*** is omitted, all messages in the **RTRV-AO** buffer are retrieved.

At least 512 of the last autonomous messages are stored.

The **RTRV-AO** buffer is circular, so any old autonomous messages will be discarded.

The **RTRV-AO** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-145. RTRV-A0 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	See the following table for all ***spec_block*** parameters.

Table 3-146. RTRV-A0 *spec_block* Input Parameters

Parameter Name	Description
atagseq	Automatic Tag Sequence or ISN (Internal Sequence Number) - specifies one or more ***atags*** for which the autonomous messages should be retrieved from the log. Examples of ranges that are allowed: ■ atagseq=10 Retrieve atag message 010. ■ atagseq=10&20 Retrieve atag message 010, 020. ■ atagseq=10&&20 Retrieve atag message 010-020. ■ atagseq=999&&1 Retrieve atag message 999, 000, 001. If the value is omitted, all messages are retrieved, regardless of atag.
msgtype	Message Type. Retrieve only ***atag*** messages of this specific type. ■ msgtype=**DBCHG** Retrieve messages reported by **REPT DBCHG**. If the value is omitted, only DBCHG messages are retrieved.

OUTPUT FORMAT

If there are autonomous messages to report, the following response is returned:

```
   sid date time
M  ctag COMPLD
   /*
   complete autonomous messages except without the termination
indicator (";")
   */
;
```

See **REPT ALM**, **REPT EVT**, **REPT DBCHG**, and **REPT SW** for the format of autonomous messages.

The output is sorted by time order. For example, if the system originally sent messages 998 through 001, and the user requests those messages, the ATAGs in the output will be in the order: 998, 999, 000, 001.

If the ATAG numbers have wrapped and the most recent entry is ATAG 040, and if the user requests ATAGSEQ=38&&43, the ATAG order in the output will be 041, 042, 043, 038, 039, 040.

If the system clock is reset, the output is sorted in the order in which the messages were stored into the log.

OUTPUT PARAMETERS

The output parameters reflect the autonomous messages that are retrieved from the database change log (See **RTRV-LOG-NTFCN**).

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-AO** command:

```
RTRV-AO:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
/*
   LT-WBM 01-08-15 07:50:00
A  012 REPT DBCHG
   "DATE=01-08-15,TIME=20-30-03: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-AO** command.

RELATED TL1 MESSAGES

ALW-MSG

INH-MSG

ED-USER

RTRV-LOG-ALM

RTRV-LOG-NTFCN

RTRV-LOG-PROTNSW

RTRV-LOG-USER

NAME

RTRV-ASAP-ASGNMT: Retrieve ASAP Assignment

The **RTRV-ASAP-ASGNMT** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-147. 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 5. ■ **DS3IN** DS3 Port (input) ■ **DS3OUT** DS3 Port (output), connected to a SONET port ■ **ENET** Ethernet ■ **ENV** Environmental (Miscellaneous Discrete) This value is available starting with Release 5. ■ **EQPT** Equipment ■ **PT** Path terminating, SONET ■ **PTSDH** Path terminating, SDH ■ **SONET** OC-N/EC1 Port ■ **SYS** System Events

Table 3-147. RTRV-ASAP-ASGNMT Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **TIMING** System Timing ■ **TRIBSONET** STS-N(c) SONET 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.

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 3-148. 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.

Table 3-148. RTRV-ASAP-ASGNMT Output Parameter

Parameter Name	Description
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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-149. RTRV-ASAP-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.
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 3) ■ **DS3IN** DS3 Port (input) ■ **DS3OUT** DS3 Port (output), connected to a SONET port ■ **ENET** Ethernet (starting in Release 5) ■ **ENV** Environmental (Miscellaneous Discrete) (Starting in Release 5.) ■ **EQPT** Equipment ■ **PT** Path terminating, SONET (starting in Release 5) ■ **PTSDH** Path terminating, SDH (starting in Release 5) ■ **SONET** OC-N/EC1 Port ■ **SYS** System Events ■ **TIMING** System Timing ■ **TRIBSONET** STS-N(c) SONET tributary.

Table 3-149. RTRV-ASAP-PROF 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. 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 3-150. 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 3) ■ DS3IN — DS3 Port (input) ■ DS3OUT — DS3 Port (output), connected to a SONET port ■ ENET — Ethernet ■ ENV — Environmental (Miscellaneous Discrete). Starting in Release 5. ■ EQPT — Equipment ■ PT — Path terminating, SONET ■ SONET — OC-N/EC1 Port ■ SYS — System Events ■ TIMING — System Timing ■ TRIBSONET — STS-N(c) SONET tributary.
pfname	ASAP profile name.

Table 3-150. RTRV-ASAP-PROF Output Parameters (Sheet 2 of 7)

Parameter Name	Description	
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.	
pftype	**Keyword**	**Description**
APS		
	fop	APS Failure of Protocol (starting in Release 3). 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 3).
	irpm	Inconsistent Ring Prot Mode (starting in Release 3).
	cable	E/W Cable Error (starting in Release 3).

Table 3-150. RTRV-ASAP-PROF Output Parameters (Sheet 3 of 7)

Parameter Name	Description	
	rdip	Ring Discovery in Progress.
	rsip	Ring Startup in Progress.
	nut_nopr	Local NUT Not Operational (starting in Release 6).
	nut_inxcgrn	NUT Inconsistent XC Granularity (starting in Release 6).
	nut_dsbld	NUT Disabled (starting in Release 6).
	nut_tmpprv	Temporary NUT Provisioned (starting in Release 6).
	etp	Extra Traffic Preempted.
	rpss	Ring Prot Switching Suspended (starting in Release 3).
DRIPATH		Starting in Release 3.
	psact	Path Switch Active.
	psfail	Path Switch Failure.
	psinh	Path Switch Inhibited.
DS3IN		
	sa_ds3los *nsa_ds3los*	DS3 Loss of Signal.
	sa_ds3lof *nsa_ds3lof*	DS3 Loss of Frame.
	sa_ds3ais *nsa_ds3ais*	Alarm Indication Signal - DS3.
	sa_ds3ber *nsa_ds3ber*	DS3 Bit Error.
	sa_ds3idle *nsa_ds3idle*	DS3 Idle Signal.
	sa_cbitmm nsa_cbitmm	DS3 C-bit mismatch
DS3OUT		
	lop	Loss of Pointer - Path (starting in Release 5).
	ais	Alarm Indication Signal - Path.

Table 3-150. RTRV-ASAP-PROF Output Parameters (Sheet 4 of 7)

Parameter Name	Description	
	rfi	Remote Failure Indication - Path.
	uneq	STS Path Unequip.
	plm	STS Payload Label Mismatch.
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_lopc *nsa_lopc*	Loss of Partial Capacity
	sa_lotc *nsa_lotc*	Loss of Total Capacity
	sa_fopr *nsa_fopr*	Failure of Protocol Rx
	sa_fopt *nsa_fopt*	Failure of Protocol Tx
ENV		
	misc_in (n=1-16)	Miscellaneous Discrete Inputs (starting in Release 5).
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 3).

Table 3-150. RTRV-ASAP-PROF Output Parameters (Sheet 5 of 7)

Parameter Name	Description	
	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 3).
	sa_mmis *nsa_mmis*	Memory Mismatch (starting in Release 3).
	sa_nvmusg *nsa_nvmusg*	Non-Volatile Memory Usage (starting in Release 3).
	sa_dccpr *nsa_dccpr*	DCC Partition Repair (starting in Release 5).
	sa_dccto *nsa_dccto*	DCC Tunnel Overflow (starting in Release 5).
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.
	plm	STS Payload Label Mismatch.
	lom	Loss of Multiframe.
	sqm	Sequence Number Mismatch.
SONET		
	sa_los *nsa_los*	Service-Affecting Loss of Signal Nonservice-Affecting Loss of Signal.

Table 3-150. RTRV-ASAP-PROF Output Parameters (Sheet 6 of 7)

Parameter Name	Description	
	sa_lof *nsa_lof*	Loss of Frame.
	sa_plos *nsa_plos*	Pulsed Loss of Signal.
	sa_aisl *nsa_aisl*	Alarm Indication Signal - Line.
	sa_rfil *nsa_rfil*	Remote Failure Indication.
	sa_eber *nsa_eber*	Excessive Error.
	sa_ber *nsa_ber*	Bit Error/Signal Degrade.
	sa_dccsect *nsa_dccsect*	DCC Sect Failure.
	sa_dccline *nsa_dccline*	DCC Line Failure (starting in Release 4.0.1).
	sa_lidsectmm *nsa_lidsectmm*	LinkID Sect Mismatch.
	sa_lidlinemm *nsa_lidlinemm*	LinkID Line Mismatch (starting in Release 3).
	sa_unssect *nsa_unssect*	User-Network Side Sect Failure.
	sa_unsline *nsa_unsline*	User-Network Side Line Failure (starting in Release 3).
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.
	csrc	Constituent Signal Rate Change (starting in Release 3).

Table 3-150. RTRV-ASAP-PROF Output Parameters (Sheet 7 of 7)

Parameter Name	Description	
	almtst	Alarm Test.
	dccsectdu	DCC Sect Disabled-Unavailable (starting in Release 3).
	dcclinedu	DCC Line Disabled-Unavailable (starting in Release 3).
	dcctypm	DCC Type Mismatch (starting in Release 3).
	far_end_cr	Far end critical alarm on RNES (starting in Release 6.0)
	far_end_mj	Far end major alarm on RNES (starting in Release 6.0)
	far_end_mn	Far end minor alarm on RNES (starting in Release 6.0)
	agne	AGNE Communication Failure
TIMING		
	syncref	Sync Reference Failure (external reference).
	holdover	System Clock Holdover.
	linesync	Line Sync Reference Failure (starting in Release 3).
TRIBSONET		
	sa_lop *nsa_lop*	sa Loss of Pointer nsa Loss of Pointer.
	sa_ais *nsa_ais*	Alarm Indication Signal - Path.
	sa_uneq *nsa_uneq*	STS Path Unequip.
	sa_pdi *nsa_pdi*	STS Payload Defect Indicator.
	sa_eber *nsa_eber*	Excessive Error - Path.
	sa_ber *nsa_ber*	Bit Error/Signal Degrade - Path.
	sa_srm *nsa_srm*	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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-151. 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 3-152. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-153. 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 3-153. 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 3-154. 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 3-154. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-155. 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 3-156. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

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 3-157. 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 3-158. 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-BANNER: Retrieve-Banner

The **RTRV-BANNER** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-BANNER:*tid*::*ctag*;

DESCRIPTION

The **RTRV-BANNER** command can be initiated by users to retrieve the user provisioned banner for the Network Element (NE).

The **RTRV-BANNER** command does not generate a **REPT DBCHG** message.

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 3-159. RTRV-BANNER Input Parameters

OUTPUT FORMAT

If there is a provisioned banner to report, the following output message 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. Parameters that specifically apply to the **RTRV-BANNER** command are defined below.

Parameter Name	Description	
spec_block		
	line1	Contents of line 1 of banner.
	line2	Contents of line 2 of banner.
	line3	Contents of line 3 of banner.
	line4	Contents of line 4 of banner.
	line5	Contents of line 5 of banner.
	line6	Contents of line 6 of banner.
	line7	Contents of line 7 of banner.
	line8	Contents of line 8 of banner.
	line9	Contents of line 9 of banner.
	line10	Contents of line 10 of banner.
	line11	Contents of line 11 of banner.

Table 3-160. RTRV-BANNER Output Parameters

EXAMPLE OUTPUT

```
RTRV-BANNER:LT-WBM::123456;

   LT-WBM 00-03-22 16:12:12
M  123456 COMPLD
   ":::line1=\"LUCENT TECHNOLOGIES - PROPRIETARY\""
   ":::line2=\"THIS SOFTWARE CONTAINS INFORMATION OF LUCENT
TECHNOLOGIES\""
   ":::line3=\"AND IS NOT TO BE DISCLOSED OR USED EXCEPT IN ACCORDANCE\""
   ":::line4=\"WITH APPLICABLE AGREEMENTS.\""
   ":::line5=\"NOTICE: THIS IS A PRIVATE COMPUTER SYSTEM.\""
   ":::line6=\"USE OF THIS SOFTWARE IS GOVERNED SOLELY AS EXPRESSLY\""
   ":::line7=\"AUTHORIZED IN THE RELEVANT AGREEMENT BETWEEN\""
   ":::line8=\"LUCENT TECHNOLOGIES AND CUSTOMER.\""
   ":::line9=\"UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.\""
   ":::line10=\"\""
   ":::line11=\"\""
;
```

ERROR RESPONSES

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

RELATED TL1 COMMANDS/MESSAGES

ENT-BANNER

NAME

RTRV-COND: Retrieve Condition

The **RTRV-COND** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-161. `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 5, ***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 5, ***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 5, 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 3-162. 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. ■ T3 — A facility-related event at the DS-3 level. ■ T1 — A timing reference event at the DS-1 level. ■ 1GE — An event at the 1 gigabit ethernet level (Starting in Release 5).

Table 3-162. `RTRV-COND` Output Parameters (Sheet 2 of 3)

Parameter Name	Description
	■ VCG — An event on a virtual concatenated group (Starting in Release 5) ■ EC1 — A facility-related event at the electrical carrier signal level 1 (starting in Release 2). ■ OC3 — A facility-related event at the optical carrier signal level 3 (starting in Release 2). ■ OC12 — A facility-related event at the optical carrier signal level 12 (starting in Release 2). ■ OC48 — A facility-related event at the optical carrier signal level 48. ■ OC192 — A facility-related event at the optical carrier signal level 192 (starting in Release 2). ■ STS1 — A facility-related event at synchronous transport signal level 1. ■ STS3C — A facility-related event for a concatenated STS3 signal (starting in Release 2). ■ STS12C — A facility-related event for a concatenated STS12 (starting in Release 3). ■ STS48C — A facility-related event for a concatenated STS48 (starting in Release 4).
conddescr	Description Of The Condition. The general format is: ■ Category ■ Entity ■ Description ■ Additional text. If there is no additional text, then the trailing comma may be omitted. 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).

Table 3-162. RTRV-COND Output Parameters (Sheet 3 of 3)

Parameter Name	Description
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).
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 OC48 LOS was reported from bay 1, shelf 1, slot 6. This was reported via **RTRV-COND** instead of **RTRV-ALM** because the notification code was previously set to No Alarm (NA). See **ED-ASAP-PROF** for how to change a notification code.

Notice that the most recent condition is listed first in the output.

```
RTRV-COND:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-06-1,OC48:NA,LOS,NSA,01-01,07-59-59,,,,\"Communications,
OC48 port, Loss Of Signal\""
   "misc_in3,COM:NA,MISC,NSA,01-01,07-20-15,,,,\"Environmental, Misc
Discrete,, door open\""
;
```

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 EVT

RTRV-ALM

RTRV-ABN

RTRV-FLT-STATE

RTRV-HDR

NAME

RTRV-CRS: Retrieve Cross Connection

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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*;

The syntax for Release 3.0 only is:

RTRV-CRS-*modifier*:*tid*:*in_aid*[,*out_aid*]:*ctag*[::*in_aid2*];

Starting in Release 4.0, the syntax is only:

RTRV-CRS-*modifier*:*tid*:*in_aid*:*ctag*;

Starting in Release 5.0, the syntax is only:

RTRV-CRS-*modifier*:*tid*:*in_aid*:*ctag*[::*ppgname*];

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 3-163. 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** ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)
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 5.0, 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 4.0, 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 4.0, the ***in_aid2*** input parameter will not be available.

Table 3-163. RTRV-CRS Input Parameters (Sheet 2 of 2)

Parameter Name	Description
ppgname	Path Protection Group Name (Starting in Release 5). 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 2, 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 2, 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 3-164. 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 5.0, 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: ■ STS1 ■ STS3 ■ STS12 (starting in Release 3) ■ STS48 (starting in Release 4)

Table 3-164. 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 3-165. 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 4.0, 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 3-165. 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 4.0, 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 3-165. 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 5). 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 5). 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 3-166. RTRV-CRS Output *state_block* Parameters

Parameter Name	Description
pst	THIS IS CURRENTLY NOT USED. A comma (,) is placed in this field.
sst	Specifies whether the circuit is red-lined for a 1-way cross connection or the source-to-destination direction of a 2-way cross connection. Values: ■ YES ■ NO.
rtnsst	Specifies whether the circuit is red-lined for the return direction (destination-to-source) of a 2-way cross connection. Values: ■ YES ■ NO.

EXAMPLE INPUT/OUTPUT

The example below retrieves the existing cross connections from the shelf specified by the AID. The output response shows a 1WAY non-BLSR cross connection:

```
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:STS1:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO,XCAPPL=30,XCNUM=011031001"
   "1-1-O02-W-6-1-1,2-1-O02-W-2-1-1:STS1:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO,XCAPPL=30,XCNUM=011111001"
   "2-1-O03-W-4-1-1,1-1-O03-W-3-1-1:STS1:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO,XCAPPL=30,XCNUM=011011001"
;
```

When AID ranging is supported, “ALL” will be an acceptable value for the ***modifier*** parameter.

The following example retrieves the existing cross connections on the tributary specified by the AID. A 1WAY and a 2WAY non-BLSR cross connections exist on this tributary. The first line of the output response shows the 2WAY cross connection and the second line shows the 1WAY cross connection:

```
RTRV-CRS-ALL:LT-WBM-789:1-1-O01-E-8-1-1:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-O01-W-8-1-1,3-1-O01-W-5-1-1:STS1:OMODE=NORM,RTNOMODE=NORM,
REPLEG=2WAY,LPBKSTAT=NO,TACCSTAT=NO,RTNTACCSTAT=NO,XCAPPL=50,XCNUM=01
1031001"
   "1-1-O01-W-8-1-1,5-2-O01-W-2-1-1:STS1:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO,XCAPPL=50,XCNUM=011091001"
;
```

The following example shows the successful completion of the command when no cross connection exists between the tributaries specified by the ***in_aid*** and ***out_aid***:

```
RTRV-CRS-STS1:LT-WBM-789:1-1-T01-2-1-1,3-2-T01-3-1-1:123456;

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

The following example retrieves the existing cross connection from the tributaries specified by the AID. The output response shows a 1WAY path-protected cross connection:

```
RTRV-CRS-STS1:LT-WBM-789:1-1-U-#-11-1-1:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-U-#-11-1-1,1-1-F01-WW-04-1-1:STS1:OMODE=NORM,LOCA=LT-WBM-78
9,SQFA=MVALID,LOCZ=LT-WBM-654,SQFZ=MVALID,REPLEG=1WAYPSW,LPBKSTAT=NO,
TACCSTAT=NO,XCAPPL=40,XCNUM=011031001"
;
```

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**.

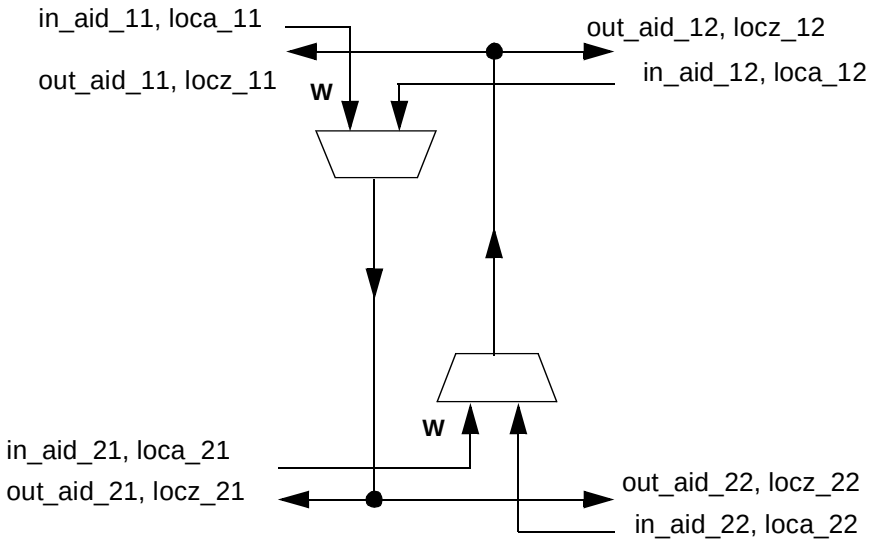


Table 3-167. UPSR (or SNCP Ring), Single Node Interconnection, Same NE (Sheet 1 of 2)

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

Table 3-167. UPSR (or SNCP Ring), Single Node Interconnection, Same NE (Sheet 2 of 2)

repleg	in_aid	out_aid	in_aid2	appg_aid
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

RTRV-TACC

NAME

RTRV-EPM: Retrieve Ethernet Performance Monitoring

The **RTRV-EPM** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

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 3-168. RTRV-EPM Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier. This parameter is available starting in Release 6. Value(s): ■ **ENET**
tid	Target Identifier. Refer to the **RTRV-HDR** command for input parameter syntax and description of this parameter.

Table 3-168. RTRV-EPM Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 6. 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 6. 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 6. 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 6. Values: ■ **15-MIN** ■ **1-DAY**.
mondat	Monitored date. This parameter is available starting in Release 6. See the description of the ***mondat*** parameter in the **RTRV-PM** command.
montm	Monitored time. This parameter is available starting in Release 6. 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 3-169. RTRV-EPM Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 6. 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 6. Value(s): ■ ENET
emontype	Monitored Parameter Type. This parameter is available starting in Release 6. See ***emontype*** in the input parameters table.
monval	Monitored Value. This contains the measured value of the parameter specified in *emontype*. This parameter is available starting in Release 6.
validity	This indicates the validity of the PM data. This parameter is available starting in Release 6. See the *validity* parameter in the **OUTPUT PARAMETERS** section of **RTRV-PM** for the values of this parameter.

Table 3-169. 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 6. 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 6. Values: ■ 15-MIN ■ 1-DAY.
mondat	Monitored date. This parameter is available starting in Release 6. See the description of the *mondat* parameter in the **RTRV-PM** command.
montm	Monitored time. This parameter is available starting in Release 6. See the description of the *montm* parameter in the **RTRV-PM** command.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-EPM** command by the network element:

```
RTRV-EPM-1GE:LT-WBM:1-1-#-#-01-1:123456::EDFE,,15-MIN,01-01,07-45;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-01-1,1GE:EDFE,2,,,15-MIN,01-01,08-00"
;
```

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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.

The **RTRV-EPORT** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-170. RTRV-EPORT Input Parameters (Sheet 1 of 2)

Parameter Name	Description
modifier	Modifier. This parameter is available starting in Release 5. 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 5. Value: Ethernet port AID. See the AID table in OSEG Appendix A. An “all” AID range is supported at the pack or shelf level.

Table 3-170. RTRV-EPORT 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 **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 3-171. RTRV-EPORT Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 5. Value: Ethernet port AID. See the AID table in OSEG Appendix A.

Table 3-171. RTRV-EPORT Output Parameters (Sheet 2 of 2)

Parameter Name	Description
modifier	Modifier. This parameter is available starting in Release 5. Value(s): ■ 1GE.
vvlan	Valid VLAN. This parameter is available starting in Release 5. 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 3-172. RTRV-EPORT *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
dftpri	Default Priority. This parameter is available starting in Release 5. Values: ■ NA (initial value) ■ HIGH ■ LOW.
dftvlan	Default VLAN Identifier. This parameter is available starting in Release 5. 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 5. Values: Alphanumeric string with a maximum of 24 characters. The first character must be a letter. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 5. Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.

Table 3-172. RTRV-EPORT *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
epmode	Ethernet Port Monitoring Mode. This parameter is available starting in Release 5. Values: ■ MON ■ NMON ■ AUTO (initial value).
eppm	Ethernet Port PM Enable. This parameter is available starting in Release 5. Values: ■ ENABLE ■ DISABLE (initial value).
fcmd	Flow Control Mode. Values: ■ DISABLE ■ AUTO (initial value).
rptmode	Repeater Mode. (Promiscuous mode) This parameter is available starting in Release 6. 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 5. 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 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1 and P1

Beginning with Release 4.0, 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 3-173. 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 3-173. 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]"
;
```

OUTPUT PARAMETERS

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

Table 3-174. 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 3-175. RTRV-EQPT *spec_block* Output Parameters (Sheet 1 of 4)

Parameter Name	Description
actlname	Acceptable Circuit Pack Name (reported for a slot AID). This parameter is available starting in Release 2. 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 2. 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 2. 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 alphanumeric 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 2. This parameter is reported for a circuit pack AID, if the value of *holdst* is VALID. This parameter is a 10-character alphanumeric code.
edxi1	Electrical DXI(1) Left Attribute. This parameter is available starting in Release 2. This parameter is reported for an I/O shelf AID. Values: ■ CONNECTED ■ NOTCONNECTED.
edxi2	Electrical DXI(2) Right Attribute. This parameter is available starting in Release 2. This parameter is reported for an I/O shelf AID. Values: ■ CONNECTED ■ NOTCONNECTED.

Table 3-175. RTRV-EQPT *spec_block* Output Parameters (Sheet 2 of 4)

Parameter Name	Description
eqptpn	Equipment ASAP Profile Name. This parameter is available starting in Release 5. 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 2. This parameter is reported for a circuit pack AID, if the value of *holdst* is VALID. 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 2. 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 2. 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 3. This parameter is reported for an electrically connected I/O shelf AID. Values: 1-4.
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 2. This parameter is reported for a circuit pack 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.

Table 3-175. RTRV-EQPT *spec_block* Output Parameters (Sheet 3 of 4)

Parameter Name	Description
shlftp	Shelf Type. This parameter is available starting in Release 2. 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 2. 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 2. 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.
ssoride	SS Bit Override. This parameter is available starting in Release 6. This parameter is only allowed with an I/O shelf AID, and is used to override normal SS bit provisioning on a per-I/O shelf basis when interworking with non-compliant SONET network elements. Values: ■ ENABLE ■ DISABLE (Initial value).
systype	System Type. This parameter is available starting in Release 2. 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.

Table 3-175. RTRV-EQPT *spec_block* Output Parameters (Sheet 4 of 4)

Parameter Name	Description
trbmddflt	Tributary Mode Default. This parameter is available starting in Release 2. This parameter is reported for a system AID. Values: ■ ADAPTIVE ■ FIXED ■ NOTPROVISIONED.

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:syswait=5-50,istddflt=SONET"
;
```

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
   "1"
   "2"
   "3"
;
```

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

RMV-EQPT

RST-EQPT

RTRV-STATE-EQPT

NAME

RTRV-EXT-CONT: Retrieve External Control

The **RTRV-EXT-CONT** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-176. 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 3-177. 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 3-177. 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: Retrieve Far-End Communications

The **RTRV-FECOM** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

Beginning with Release 4.0, the user privilege code is:
User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-FECOM:*tid*:*aid*:*ctag*::[*port*];

Beginning in Release 4.0.1, 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 3-178. 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 3-178. RTRV-FECOM Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 2. 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 2. 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 4.0.1. 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

If the network element fully complies with the **RTRV-FECOM** request, the following response is returned:

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

Beginning with Release 4.0.1, 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 3-179. RTRV-FECOM Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 2. 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 2. 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 4.0.1. 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 3-180. `RTRV-FECOM` *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
chanstat	This parameter is available starting in Release 4.0.1. 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.
dccprottp	This parameter is available starting in Release 4.0.1. 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 2. This parameter indicates whether communication over the DCC channel is enabled or disabled. Values: ■ ENABLE ■ DISABLE. Prior to Release 4.0, DISABLE only appears in the output if a port is specified.
l3mlm	Max Link Metric. This parameter is available starting in Release 4.0.1. This is the maximum value of a routing metric assignable to a circuit. Values: 1 - 63. The initial value is 20. Starting with Release 4.0.1, this parameter is available for the Section DCC.

Table 3-180. RTRV-FECOM *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
	Starting with Release 4.0.1, this parameter is available for the Line DCC. Starting in Release 5.0 the parameter l3mlm is no longer supported
lapdmode	LAPD Mode. This parameter is available starting in Release 6. This parameter provisions the data link service. Values: ■ AITS ■ UITS (initial value). ■ AUTO.
lapdrl	This parameter is available starting in Release 2. 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 2, this parameter is available for the Section DCC. Starting with Release 4, 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-t09-w-04-1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dccei-cp,1-1-t09-w-04-1:dccstat=ENABLE,lapdrl=USER-SIDE"
;
```

The following is an example of the **RTRV-FECOM** command starting with Release 3.0:

```
RTRV-FECOM:LT-WBM:1-1-#-#-dccei-cp:123456::1-1-t09-w-04-1;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-#-#-dccei-cp,1-1-t09-w-04-1,SECTION: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-FECOM-LAN: Retrieve Far-End Communications for LAN

The **RTRV-FECOM-LAN** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-181. 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 2. 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 3-182. RTRV-FECOM-LAN Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 2. 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 3-183. RTRV-FECOM-LAN *spec_block* Output Parameters
(Sheet 1 of 3)

Parameter Name	Description
extllm	External LAN Max Link Metric. This parameter is available starting in Release 4.0.1. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63. The initial value is 14. Starting from Release 6.0 this paprameter is no longer supported.

Table 3-183. `RTRV-FECOM-LAN` *spec_block* Output Parameters
(Sheet 2 of 3)

Parameter Name	Description
extltss	External LAN TARP Storm Suppression. This parameter is available starting in Release 6. Values: ■ ENABLE ■ DISABLE (initial value).
intlanstat	Internal LAN Status. This parameter is available starting in Release 4.0.1. This parameter indicates whether communication over the internal LAN (ON-LAN) is enabled or disabled. Values: ■ ENABLE ■ DISABLE.
intllm	Internal LAN Max Link Metric. This parameter is available starting in Release 4.0.1. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63. The initial value is 14. Starting from Release 6.0 this paprameter is no longer supported.
isis_stat	Indicates whether (integrated) IS-IS is enabled or disabled on the LAN port. This parameter is available starting in Release 5.1.11. Note: enabling has no effect if *lanstat* is disabled. Type: alphanumeric value set Values: ■ ENABLE (initial value) ■ DISABLE.
lanrpri	LAN Designated Router Priority. This parameter is available starting in Release 4.0.1. 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.

Table 3-183. RTRV-FECOM-LAN *spec_block* Output Parameters
(Sheet 3 of 3)

Parameter Name	Description
lanstat	External LAN Status. This parameter is available starting in Release 2. 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-FLT-STATE: Retrieve Fault State

The **RTRV-FLT-STATE** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-184. 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 3-185. 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. It has one of the following values: If the *aidtype* is not listed below, for example an *aidtype* of STS1 is not listed, then the *aidtype* field will not be included in the output. ■ T3 — A facility-related event at the DS-3 level. ■ 1GE — An event at the 1 gigabit ethernet level (Starting in Release 5). ■ VCG — An event on a virtual concatenated group (Starting in Release 5). ■ EC1 — A facility-related event at the electrical carrier signal level 1. ■ OC3 — A facility-related event at the optical carrier signal level 3. ■ OC12 — A facility-related event at the optical carrier signal level 12. ■ OC48 — A facility-related event at the optical carrier signal level 48. ■ OC192 — A facility-related event at the optical carrier signal level 192 (starting with Release 3). ■ STS1 — A facility-related event at synchronous transport signal level 1 (starting in Release 3).

Table 3-185. RTRV-FLT-STATE Output Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ STS3C — A facility-related event for a concatenated STS3 (starting in Release 3). ■ STS12C — A facility-related event for a concatenated STS12 (starting in Release 3). ■ STS48C — A facility-related event for a concatenated STS48 (starting in Release 4).
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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-186. RTRV-HDR Input Parameters (Sheet 1 of 2)

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.

Table 3-186. RTRV-HDR Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	Beginning with Release 4.0, 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 3-187. 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 3-188. 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 3-189. RTRV-HDR Output Parameters

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.
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.

For commands that have an AID range as input, a COMPLD completion code means that the command was successful on all the AIDs within the range.

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 6.0 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5

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 3-190. 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 3-191. RTRV-IP-MAP Output Parameters

Parameter Name	Description
spec_block	See the following table for the *spec_block* parameters.

Table 3-192. 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 5.

Table 3-192. RTRV-IP-MAP Output *spec_block* Parameters (Sheet 2 of 2)

Parameter Name	Description
acid	This parameter is available in Release 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-193. 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 3-194. 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 3-195. 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 3-195. `RTRV-IP-ROUTE` Output Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters.

Table 3-196. `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 3-196. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-197. 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 3-198. 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 3-199. 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 3-199. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 5.0, 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 3-200. 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 3-200. 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 3-201. 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 3-201. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 5.0, 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 3-202. `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 3-203. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 5.0, 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 3-204. `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 3-205. RTRV-LOG-PROTNSW Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Access Identifier. Value: circuit pack or port AID. See the AID in OSEG Appendix A. For SW log entries see also details in aid output parameter of REPT-EVT.
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 3-205. 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 available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

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 3-206. 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

Table 3-206. Commands in Security Information Log (Sheet 2 of 2)

Security-Related Event	Status
ED-NE-SECU	COMPLD or DENY
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 3-207. 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 3-208. 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 3-208. 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 01-08-15 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 5.0, 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 3-209. 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 3-210. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-211. 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** ■ **T3** ■ **EC1** ■ **OC3** ■ **OC12**

Table 3-211. RTRV-LPBK Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **OC48** ■ **1GE** Only near-side loopback is supported. ■ **STS1** ■ **STS3** ■ **STS12** (starting in Release 3) ■ **STS48** (starting in Release 4)
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 3-212. 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: ■ T3 ■ EC1 ■ OC3 ■ OC12 ■ OC48 ■ 1GE Only near-side loopback is supported. ■ STS1 ■ STS3 ■ STS12 (starting in Release 3) ■ STS48 (starting in Release 4) 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 3-213. RTRV-LPBK Output *spec_block* Parameters (Sheet 1 of

Parameter Name	Description
nsflpbkstat	Specifies the current near-side facility loopback status on the *aid*. This parameter is available starting in Release 5. Values: ■ YES ■ NO.

Table 3-213. RTRV-LPBK Output *spec_block* Parameters (Sheet 2 of

Parameter Name	Description
fsflpbkstat	Specifies the current far-side facility loopback status on the *aid*. This parameter is available starting in Release 5. Values: ■ YES ■ NO.
crslpbkstat	Specifies the current cross-connect loopback status on the *aid*. This parameter is available starting in Release 2. 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 STS-1 tributary from the network element:

```
RTRV-LPBK-STS1: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:STS1:CRSLPBKSTAT=YES"
;
```

The following example shows the successful completion of the **RTRV-LPBK** command by the network element. This example retrieves the facility loopback information on a T3 port from the network element:

```
RTRV-LPBK-T3:LT-WBM-789:1-2-#-#-4-2:123456;

   LT-WBM-789 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-U-#-11-1:T3:NSFLPBKSTAT=YES,FSFLPBKSTAT=NO"
;
```

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-214. `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 3-215. 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 3-215. 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 3-216. 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 6.0, this parameter is no longer supported to improve the connectivity robustness.
dcctype	Channel Type. Beginning with Release 4.0.1, 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 6.0, this parameter is no longer supported to improve the connectivity robustness.

Table 3-216. 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 3, 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.
tid	System Name (TID). This parameter may be shown for DCC neighbors. Refer to the **RTRV-HDR** command for the input parameter syntax and description of this parameter. If the TID is unknown, this field will not appear in the output.

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=39840F8000000000000000000000000000000a300"
   "1-2-#-#-dccei-cp:ON:net=39840F8000000000000000000000000000000a200,
level2=N"
   "1-2-#-#-dccei-cp:ON:net=39840F8000000000000000000000000000000a500,
level2=N"
   "1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-02-1:npaid=1-2-#-#-14-1,
net=39840F8000000000000000000000000000000a400,
nename=LT-WBM1,level2=N,dcctype=SECTION"
   "1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-08-1:npaid=1-2-#-#-04-1,
net=39840F8000000000000000000000000000000a400,
nename=LT-WBM1,level2=N,dcctype=SECTION"
   "1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-06-1:npaid=1-2-#-#-04-1,
net=39840F8000000000000000000000000000000a600,
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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 2.0:

RTRV-MAP-NETWORK:*tid*::*ctag*::[*level2*];

Starting in Release 3.0:

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 3-217. `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.
aid	Access Identifier. This parameter is available starting in Release 3. 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.
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** Report will list only the reachable NEs (including the default Level 2 IS) in the local Level 1 area. Starting with Release 3, the parameter ***level2*** can also have the value: ■ **Y** Report will list the reachable Level 2 IS NEs across all areas, plus the Level 1 NEs in the local area. The Level 2 NEs in other areas are listed only if the local NE is provisioned as a Level 2 IS. If this parameter is omitted, the value is **N**.

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 3-218. RTRV-MAP-NETWORK Output Parameters

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters.

Table 3-219. RTRV-MAP-NETWORK *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
aid	Starting with Release 4, 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.

Table 3-219. RTRV-MAP-NETWORK *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
level	This field is the Level 1 IS router. Values: ■ Y ■ N.
level2	Starting with Release 3, 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=39840F8000000000000000000000000000000aa00,level2=Y"
   "tid=LT-WBM,net=39840F8000000000000000000000000000000ab00,level2=Y"
   "tid=LT-WBM,net=39840F8000000000000000000000000000000a300,level2=Y"
   "tid=LT-WBM,net=39840F8000000000000000000000000000000a400,level2=Y"
   "net=39840F8000000000000000000000000000000a100,level2=Y"
   "net=39840F8000000000000000000000000000000a200,level2=Y"
   "net=39840F8000000000000000000000000000000a500,level2=Y"
   "net=39840F8000000000000000000000000000000a600,level2=Y"
   "net=39840F8000000000000000000000000000000a700,level2=Y"
   "net=39840F8000000000000000000010000000000a800,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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2, M2

Beginning with Release 5.0, the UPC is:
User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-MAP-RING:*tid*:[*aid*]:*ctag*::[*rid*];

Starting in Release 4, 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 3-220. RTRV-MAP-RING Input Parameters (Sheet 1 of 2)

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).

Table 3-220. `RTRV-MAP-RING` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
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 5.0, 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). Starting in Release 6.1.5, the value can only 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 4, 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 3-221. 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 5.0, 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). Starting in Release 6.1.5, the value can only 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).

Table 3-221. `RTRV-MAP-RING` Output Parameters (Sheet 2 of 2)

Parameter Name	Description
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.
spec_block	See the following table for all *spec_block* parameters. The following *spec_block* parameters are related to ring map list.

Table 3-222. `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 3-222. 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

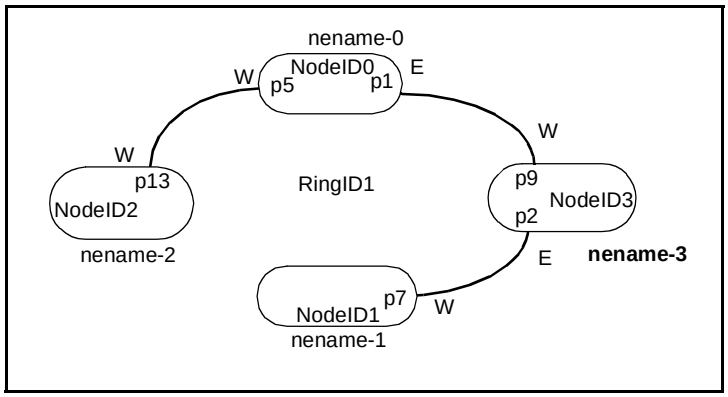


Figure 1. Open Ring (RingID1)

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=39840F8000000000000000000000000000000a100"
   "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=39840F8000000000000000000000000000000a300"
   "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=39840F8000000000000000000000000000000a000"
   "1-1-f01:RingID1,1:nid=2,linkid=\"{nename-2,,},
{nename-1,,}\",continuity=OPEN,
net=39840F8000000000000000000000000000000a200"
;
```

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

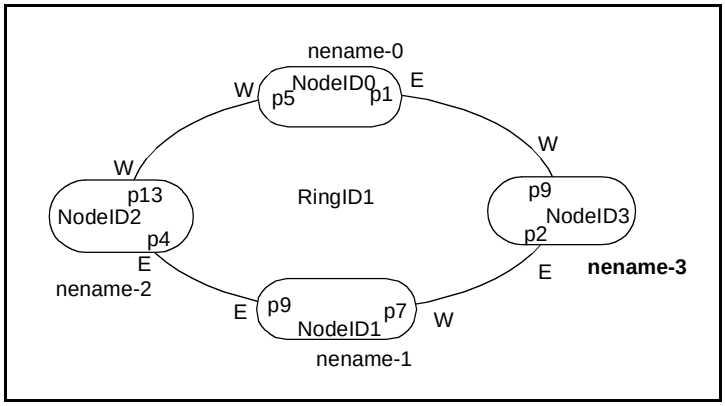


Figure 2. Ring Map for Closed Ring at nename-3

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=39840F8000000000000000000000000000a000"
   "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=39840F8000000000000000000000000000a300"
   "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=39840F8000000000000000000000000000a100"
   "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=39840F8000000000000000000000000000a200"
;
```

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

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 3-223. `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: ■ **OC3** Retrieve parameters at the optical carrier signal level 3. ■ **OC12** Retrieve parameters at the optical carrier signal level 12. ■ **OC48** Retrieve parameters at the optical carrier signal level 48. ■ **OC192** Retrieve parameters at the optical carrier signal level 192. ■ **STS1** This requests maintenance information at synchronous transport signal level 1. This modifier value is also applicable to concatenated tributaries. For concatenated signals, the maintenance information is obtained from the first tributary.
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 3-224. 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 3-225. `RTRV-MNTC` *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
inql	Incoming Quality Level on S1 byte (starting in Release 4.0). 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 SONET: ■ DUS (initial value) ■ PRS ■ STU ■ ST2 ■ ST3 ■ SIC ■ INVALID ■ NA - not available. Valid for ***modifier*** value OC3. Valid for ***modifier*** value OC12. Valid for ***modifier*** value OC48. Valid for ***modifier*** value OC192.
outql	Outgoing Quality Level on S1 byte (starting in Release 4.0). This parameter shows the outgoing quality level message on the S1 overhead byte. Values for SONET are: ■ DUS (initial value) ■ PRS ■ STU ■ ST2 ■ ST3 ■ SIC. Valid for ***modifier*** value OC3. Valid for ***modifier*** value OC12.

Table 3-225. `RTRV-MNTC` *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
	Valid for ***modifier*** value OC48. Valid for ***modifier*** value OC192.
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 STS1. 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 5, 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 STS1.
siglb	Signal Label. This parameter shows the value of Signal Label on the incoming path overhead C2 byte of a non-terminated tributary. Valid for ***modifier*** value STS1. 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-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:ptrc=313233343536373839404142434445,
siglb=01"
;
```

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-226. 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 3-227. RTRV-NE Output Parameters

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters.

Table 3-228. RTRV-NE *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
duara	Directory User Agent and Registration Agent. This parameter is available starting in Release 2. Values: ■ ENABLE (initial value) ■ DISABLE.

Table 3-228. RTRV-NE *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
tl1tcpipgw	This parameter is available starting with Release 5. It enables or disables the TCP/IP Gateway application, which is 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.

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-NE** command:

```
RTRV-NE:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   ":duara=DISABLE"
   ":tunstat=ENABLE"
;
```

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-RNES: Retrieve network element remote NE status

The **RTRV-NE-RNES** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-NE-RNES:*tid*::*ctag*;

DESCRIPTION

The **RTRV-NE-RNES** command retrieves the attributes associated with the network element that pertain to Remote Network Element Status alarming. See **ED-NE-RNES** for a description of the remote alarming feature.

The **RTRV-NE-RNES** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-229. RTRV-NE-RNES 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-RNES** command completes successfully, then the following normal completion response is returned:

```
   sid date time
M  ctag COMPLD
   ":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-NE-RNES** command.

Table 3-230. RTRV-NE-RNES Output Parameters

Parameter Name	Description
spec_block	See the following table for all *spec_block* parameters.

Table 3-231. RTRV-NE-RNES *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
agne	Alarm Gateway Network Element. This parameter indicates whether the network element is a gateway for the RNES application. The alarm gateway network element(s) collects the alarms and distributes the information to all network elements in the alarm group. For redundancy, there can be more then one AGNE. Values: ■ YES ■ NO (initial value).

Table 3-231. RTRV-NE-RNES *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
almgrp	Alarm group. This parameter defines the network element's alarm group. The local network element will exchange remote alarm information with all other network elements which are connected by the DCC and have the same *almgrp* value. The RTRV-ALM-NTWK command can be used to retrieve far-end alarms for the alarm group. Values: ■ 1-255 The initial value is 255.
rnestat	Remote Network Element Status. This parameter indicates whether or not the RNES application is enabled. If disabled, then the far-end alarms will not set the far-end activity indicator on the user panel. If disabled, then the RTRV-ALM-NTWK command will not display far-end alarms for this network element. Values: ■ ENABLE ■ DISABLE (initial value).

EXAMPLE INPUT/OUTPUT

The following is an example of the **RTRV-NE-RNES** command:

```
RTRV-NE-RNES:LT-WBM::123456;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   ":rnestat=ENABLE,almgrp=248,agne=YES"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ED-NE-RNES

RTRV-ALM-NTWK

NAME

RTRV-NE-SECU: Retrieve Network Element Security

The **RTRV-NE-SECU** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 5.0, 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 3-232. 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 3-233. 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 2. 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 3-234. RTRV-NE-SECU *spec_block* Output Parameters

Parameter Name	Description
intrvl	Lockout Period. This parameter is available starting in Release 2. 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 2. 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 4.0.1. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-235. RTRV-PM Input Parameters (Sheet 1 of 10)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the retrieve pm command is to act. Values:

Table 3-235. RTRV-PM Input Parameters (Sheet 2 of 10)

Parameter Name	Description
	■ **T3** ■ **EC1** ■ **OC3** ■ **OC12** ■ **OC48** ■ **OC192** ■ **STS1** ■ **STS3C** ■ **STS12C** ■ **STS48C**
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**. **Note (ALL) :** Only relevant parameter types are reported (e.g., PSC&PSD are omitted if no protection group exists for the addressed Port or Trib). The following values are for T3 ***modifier***: ■ **CVL** ■ **ESL** ■ **SESL** ■ **LOSS-L**

Table 3-235. `RTRV-PM` Input Parameters (Sheet 3 of 10)

Parameter Name	Description
	■ **CVP** ■ **CV-PFE** ■ **ESP** ■ **ES-PFE** ■ **ESA-P** ■ **ESA-PFE** ■ **ESB-P** ■ **ESB-PFE** ■ **SESP** ■ **SES-PFE** ■ **SAS-P** ■ **SAS-PFE** ■ **AISS-P** ■ **UASP** ■ **UAS-PFE** ■ **FC-P** ■ **ALL**. The following values are for EC1 ***modifier***: ■ **SEFS-S** ■ **CVL** ■ **CV-LFE** ■ **ESL** ■ **ES-LFE** ■ **SESL** ■ **SES-LFE** ■ **UASL** ■ **UAS-LFE** ■ **AISS-L**

Table 3-235. RTRV-PM Input Parameters (Sheet 4 of 10)

Parameter Name	Description
	■ **FC-L** ■ **FC-LFE** (line) ■ **ALL**. The following values are for OC3 and OC12 ***modifiers***: ■ **CVS** ■ **ESS** ■ **SESS** ■ **SEFS-S** ■ **LOSS-S** ■ **CVL** ■ **CV-LFE** ■ **ESL** ■ **ES-LFE** ■ **SESL** ■ **SES-LFE** ■ **UASL** ■ **UAS-LFE** ■ **AISS-L** ■ **FC-L** ■ **FC-LFE** ■ **PSC** ■ **PSD** ■ **ALL**. The following values are for OC48 ***modifier*** only: ■ **LBCN** ■ **OPT** ■ **OPR** [physical] ■ **CVS**

Table 3-235. `RTRV-PM` Input Parameters (Sheet 5 of 10)

Parameter Name	Description
	■ **ESS** ■ **SESS** ■ **SEFS-S** ■ **LOSS-S** ■ **CVL** ■ **CV-LFE** ■ **ESL** ■ **ES-LFE** ■ **SESL** ■ **SES-LFE** ■ **UASL** ■ **UAS-LFE** ■ **AISS-L** ■ **FC-L** ■ **FC-LFE** ■ **PSC** (line, excluding 4-fiber BLSR) ■ **PSC-S** (4-fiber BLSR) ■ **PSC-R** (4-fiber BLSR) ■ **PSD** (line, including 4-fiber BLSR) ■ **ALL**. ■ **PSC-W** ■ **PSC-P** The following values are for OC192 ***modifier*** only: ■ **LBCN** ■ **OPT** ■ **OPR** [physical] ■ **CVS**

Table 3-235. RTRV-PM Input Parameters (Sheet 6 of 10)

Parameter Name	Description
	■ **ESS** ■ **SESS** ■ **SEFS-S** ■ **LOSS-S** ■ **CVL** ■ **CV-LFE** ■ **ESL** ■ **ES-LFE** ■ **SESL** ■ **SES-LFE** ■ **FECC-L** ■ **FECU-L** ■ **UASL** ■ **UAS-LFE** ■ **AISS-L** ■ **FC-L** ■ **FC-LFE** ■ **PSC** (line, excluding 4-fiber BLSR) ■ **PSC-S** (4-fiber BLSR) ■ **PSC-R** (4-fiber BLSR) ■ **PSD** (line, including 4-fiber BLSR) ■ **ALL**. The following values are for STS1 (path) and are also applicable to STS3c, STS12c, and STS48c tributaries: ■ **CVP** ■ **CV-PFE** ■ **ESP** ■ **ES-PFE**

Table 3-235. RTRV-PM Input Parameters (Sheet 7 of 10)

Parameter Name	Description
	■ **SESP** ■ **SES-PFE** ■ **UASP** ■ **UAS-PFE** ■ **FC-P** ■ **FC-PFE** ■ **PPJC-PGEN** ■ **NPJC-PGEN** ■ **PPJC-PDET** ■ **NPJC-PDET** ■ **ALL**.
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, SDH physical and regenerator 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**.

Table 3-235. RTRV-PM Input Parameters (Sheet 8 of 10)

Parameter Name	Description
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 (default). ■ **OUT** Outgoing PM from the DS3 facility. ■ **PTF** This parameter indicates terminated SONET/SDH path PM profile. It will be reported only when the profile type is “path” or “HOVC path”. ■ **ALL** All values of ***dirn***. If the value is omitted, this parameter defaults to **IN**.
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: ■ **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.

Table 3-235. RTRV-PM Input Parameters (Sheet 9 of 10)

Parameter Name	Description
	If this parameter is omitted, the PM period for the current time will be reported. Starting in Release 4.0, 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. ■ **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.

Table 3-235. RTRV-PM Input Parameters (Sheet 10 of 10)

Parameter Name	Description
	■ **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 3-236. `RTRV-PM` Output Parameters (Sheet 1 of 3)

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 OC48 ***modifier***, the system responds with a 0 or 1 to represent 'good' or 'no good' indication for the **LBCN** parameter value.
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, SDH physical and regenerator 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.

Table 3-236. `RTRV-PM` Output Parameters (Sheet 2 of 3)

Parameter Name	Description
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. Starting in Release 1.0, 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.

Table 3-236. RTRV-PM Output Parameters (Sheet 3 of 3)

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 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 STS1:

```
RTRV-PM-sts1:LT-WBM:1-1-f31-ew-05-1-27:123456::es-p,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:es-p,17,,tca,,,15-min,,00-00"
   "1-1-f31-ew-05-1-27:es-p,10,,tca,,,15-min,,00-15"
   . . .
   "1-1-f31-ew-05-1-27:es-p,15,,tca,,,15-min,,08-00"
;
```

The following example shows the successful completion of a **RTRV-PM** command by the network element for a T3:

```
RTRV-PM-T3:LT-WBM:1-1-u-#-12-5:123456::uas-pfe,,fend,in,1-day;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-u-#-12-5:uas-pfe,5,I-08,,fend,in,1-day"
;
```

The following example shows the successful completion of a **RTRV-PM** command by the network element for an OC12:

```
RTRV-PM-oc12:LT-WBM:1-1-o18-w-13-1:123456::ses-l,,,,15-min,,07-45;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-o18-w-13-1:ses-l,22,I-13,tca,,,15-min,,07-45"
;
```

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 location specified does not match the montype 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-PRMTR-DATA: Retrieve Parameter Data

The **RTRV-PRMTR-DATA** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 3-237. 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 3-238. 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 3-239. 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 3-239. 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 3-239. 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 5.0, 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 3-240. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-241. 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 3-242. 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 3-243. 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 3-244. 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,01,01,03,39840F8000000000000000008006A11234500,\\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,01,01,02,39840F8000000000000000008006A11118500,/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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 6.0

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 3-245. 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 3-245. RTRV-PROTN-ACC Input Parameters (Sheet 2 of 2)

Parameter Name	Description
protype	Protection Type. Value(s): ■ **2F** (starting in Release 6).
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 3-246. 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 3-247. 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 3-247. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

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

Starting in Release 5, **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 3-248. 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 5) ■ **1+1**: *bay-shelf*-oall (starting in Release 2) ■ **2F**: *bay-shelf*-tall (starting in Release 2) ■ **PATHDRI:** *bay-shelf-#-#-slot-port*-all (starting in Release 4.0.1) Starting in Release 4.0, *slot* and *port* can also have the value all. ■ **CONSTITUENTPATH:** *bay-shelf-#-#-slot-port*-all (starting in Release 5). Starting in Release 4.0, *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 2) ■ **2F**: port AID (starting in Release 2) ■ **EQPTTMG**: circuit pack AID ■ **EQPTSWFBR**: circuit pack AID

Table 3-248. `RTRV-PROTN-GRP` Input Parameters (Sheet 2 of 3)

Parameter Name	Description
	■ **PATHDRI**: Input tributary AID (starting in Release 5). 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 5). 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 5) ■ **1+1** (starting in Release 2) 1+1 is for optical protection. ■ **2F** (starting in Release 2) ■ **PATHDRI** (starting in Release 4.0.1) 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.

Table 3-248. RTRV-PROTN-GRP Input Parameters (Sheet 3 of 3)

Parameter Name	Description
	■ **CONSTITUENTPATH** (starting in Release 5) Constituent Path is not, in fact, a protection group type, but rather another way of looking at a DRI/Path Protection group. ■ **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 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 2) Starting in Release 5.0, 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). Starting in Release 6.1.5, the value can only 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 3-249. RTRV-PROTN-GRP Output Parameters (Sheet 1 of 2)

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.

Table 3-249. RTRV-PROTN-GRP Output Parameters (Sheet 2 of 2)

Parameter Name	Description
CML	This parameter can also be the tributary AID of a constituent member of a path DRI. For this case, the input value of ***protype*** must be **PATHDRI**. This parameter may be repeated as part of a Constituent Member List (see CML). Starting in Release 4.0.1, 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 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 1 of 11)

Parameter	Description/PROTYPE	Value
actunit	Active Unit State. This parameter is applicable to the following *protype**s***:	
	■ 1+1 (starting in Release 2)	WKG, PROTN
	■ PATHDRI (starting in Release 4.0.1)	WKG, PROTN
	■ CONSTITUENTPATH (starting in Release 5)	WKG, PROTN
	■ EQPTTMG	0, 1
	■ EQPTSWFBR	0, 1
	This parameter may be repeated as part of a Constituent Member List (see CML).	

Table 3-250. `RTRV-PROTN-GRP` *spec_block* Parameters (Sheet 2 of 11)

Parameter	Description/PROTYPE	Value
actunitaid	Active Unit AID. This parameter is applicable to the following *protypes*: ■ PATHDRI (starting in Release 4.0.1) ■ CONSTITUENTPATH (starting in Release 5). This parameter may be repeated as part of a Constituent Member List (see CML).	 logical tributary AID logical tributary AID
actunitfe	Far-End Incoming Req Selection. This parameter is applicable to the following *protype(s)*: ■ 1+1 (starting in Release 3).	 WKG, PROTN, NONE, INVALID
actunitne	Near-End Outgoing Req Selection. This parameter is applicable to the following *protype(s)*: ■ 1+1 (starting in Release 3).	 WKG, PROTN, NONE
adjppl	Adjunct Path Protection List. This parameter is applicable to the following *protype(s)*: ■ PATHDRI (starting in Release 5). 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 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 3 of 11)

Parameter	Description/PROTYPE	Value
	■ 1+1 (starting in Release 2). 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
apsoride	APS Override. For APS behavior, this overrides the value of *iwtype*. It is only applicable if *protocol* has a value of 1+1_BIDIR. For other values of *protocol*, *apsoride* cannot be modified or retrieved. If *protocol* is changed from a value of 1+1_BIDIR, then *apsoride* is reset to a value of NONE. This parameter is only valid when *protype* has a value of 1+1.	SONET, SDH, NONE (initial value)
apsout	Near-End Outgoing APS Message. This parameter is applicable to the following *protype(s)*: ■ 1+1 (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 5)	profile name
blsrpn	BLSR Protection Switch Profile Name. This parameter is applicable to the following *protypes*:	

Table 3-250. `RTRV-PROTN-GRP` *spec_block* Parameters (Sheet 4 of 11)

Parameter	Description/PROTYPE	Value
	■ 2F (starting in Release 5)	profile name
cp0	The member 0 of an equipment protection group. This parameter is applicable to the following *protypes*: ■ EQPTTMG ■ EQPTSWFBR	 circuit pack AID 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*: ■ PATHDRI ■ CONSTITUENTPATH (starting in Release 5). This parameter may be repeated as part of a Constituent Member List (see CML).	Some values may not be applicable for a particular release. STS1, STS3C, STS12C, STS48C. VC3, VC4, VC44C, VC416C STS1, STS3C, STS12C
dcclm-sprotmd	DCC Line/MS Protection Mode. Starting in Release 4.0.1, this parameter is applicable to the following *protype(s)*: ■ 1+1 (starting in Release 4.0.1).	DISABLE is the initial value. ENABLE, DISABLE
dccsr-sprotmd	DCC Sect/RS Protection Mode. Starting in Release 4.0.1, this parameter is applicable to the following *protype(s)*: ■ 1+1 (starting in Release 4.0.1).	DISABLE is the initial value. ENABLE, DISABLE
dripathpn	DRI/Path Protection Switch Profile Name. This parameter is applicable to the following *protype(s)*: ■ PATHDRI (starting in Release 4.1).	 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 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 5 of 11)

Parameter	Description/PROTYPE	Value
	■ 2F (starting in Release 2)	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 2)	 0-15
eapsprotn	East Incoming APS Message, Protection. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 2)	 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 2) 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 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 6 of 11)

Parameter	Description/PROTYPE	Value
east	East Group Member. This parameter is applicable to the following *protype(s)*: ■ 2F (starting in Release 2).	 port AID
elprotnsw	East Last Protection Switch Attempt. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 2)	 SUCCESS, DENY, FAILURE
eswreq	East Switch Request State. This parameter is applicable to the following *protypes*: ■ 2F (starting in Release 2) 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 4.0.1).	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 5)	 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.

Table 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 7 of 11)

Parameter	Description/PROTYPE	Value
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 6)	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 3)	OC3, OC12, OC48, OC192, STM1, STM4, STM16, STM64
	■ 2F (starting in Release 3)	OC48, OC192, STM16, STM64
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. It is an alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes. This parameter is applicable to the following *protype(s)*:	
	■ PATHDRI (starting in Release 5).	ASCII string of up to 24 characters from the TID character set

Table 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 8 of 11)

Parameter	Description/PROTYPE	Value
protn	Protection Group Member. This parameter is applicable to the following *protypes*: ■ 1+1 (starting in Release 2) ■ PATHDRI (starting in Release 3) ■ 1xNELEC ■ A value of \"\" denotes an empty value.	 port AID logical tributary AID circuit pack AID \"\"
protnsiglvl	Signal Level of Protection Group Member. This parameter may be repeated as part of a Constituent Member List (see CML).	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 *protype(s)*: ■ 1+1 (starting in Release 2). Some values may not be available for a particular release.	 1+1_UNI, 1+1_BIDIR
protype	Protection Type. This parameter is applicable to the following *protypes*: Starting in Release 2: Starting in Release 2: Starting in Release 4.0.1: Starting in Release 5:	 1+1 2F PATHDRI CONSTITUENTPATH 1xNELEC EQPTTMG EQPTSWFBR

Table 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 9 of 11)

Parameter	Description/PROTYPE	Value
prounit	Protected Unit. The circuit pack that is being protected. This parameter is applicable to the following *protype(s)*: ■ 1xNELEC.	 circuit pack AID
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 2) Starting in Release 5.0. Starting in Release 6.1.5.	 ASCII string of up to 15 characters from the TID character set. 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). The value can only 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 2)	 IDLE, SWITCHING, PASSTHROUGH, SUSPENDED-IDLE, SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH

Table 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 10 of 11)

Parameter	Description/PROTYPE	Value
rme	Revertive Mode Enable. This parameter is applicable to the following *protypes*:	
	■ 1+1 (starting in Release 2)	ENABLE, DISABLE. The initial value is DISABLE.
	■ PATHDRI (starting in Release 4.0.1).	ENABLE, DISABLE. The initial value is determined by the value of ***ppbv*** as set via **ENT-CRS**.
swreq	Switch Request State. This parameter is applicable to the following *protypes*:	
	■ 1+1	See next table.
	■ PATHDRI (starting in Release 4.0.1)	See next table.
	■ CONSTITUENTPATH (starting in Release 5)	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.
	This parameter may be repeated as part of a Constituent Member List (see CML).	
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*:	

Table 3-250. RTRV-PROTN-GRP *spec_block* Parameters (Sheet 11 of 11)

Parameter	Description/PROTYPE	Value
	■ 1+1 (starting in Release 2)	port AID
	■ PATHDRI (starting in Release 3)	logical tributary AID
	■ 1xNELEC	circuit pack AID (note 1)
	■ A value of \"\" denotes an empty value.	\"\"
wkgsiglvl	Signal Level of wkg. This parameter is applicable to the following *protypes*:	
	■ 1+1 (starting in Release 3)	SF, SD, NONE
	■ PATHDRI (starting in Release 4.0.1)	SF, SD, NONE
	■ CONSTITUENTPATH (starting in Release 5).	SF, SD, NONE
	This parameter may be repeated as part of a Constituent Member List (see CML).	
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 5.0, the value 99 representing infinity is no longer supported.	
	■ 1+1	0-12 and 99 (which represents infinity). The units of *wtr* are minutes.
	■ 2F (starting in Release 2)	0-12 and 99.
	■ 1xNELEC.	0-12 and 99 (which represents infinity). The units of *wtr* are minutes.

Note 1: The output will consist of an ampersand (&) separated list of entities.

The following table shows values for the parameter *swreq* as a function of protection group type. For type 1xNELEC, the parameter *lckactst* indicates whether or not the entity is in a lockout (LO) state.

Table 3-251. *swreq* Values

Protection Group Type	LO	FS	EQPT FAILED	SF	SD	MS	WTR	DNR	NR	FOP
1+1 (optical)	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes
1xNELEC		Yes	Yes			Yes	Yes		Yes	
CONSTITUENTPATH	Yes	Yes		Yes	Yes	Yes	Yes		Yes	
EQPTTMG			Yes						Yes	
EQPTSWFBR		Yes	Yes						Yes	
PATHDRI	Yes	Yes		Yes	Yes	Yes	Yes		Yes	

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"
;
```

To help understand a **PATHDRI** example that will be given below, it will be helpful to summarize some facts pertaining to DRIs.

- The first output line for a PATHDRI gives information about the DRI as a entity.
- The following output line gives information about the constituent members.
- Even for a fixed-rate path DRI, there will be two output lines. The constituent member that is described by the second line will have a rate equal to the DRI's rate.
- A path DRI has two input legs, one referred to as the working leg and the other as the protection leg. It is possible for **RTRV-PROTN-GRP** to indicate some constituent members have been selected from the working leg while others have been selected from the protection leg.
- To determine whether or not all constituent members have been selected from the same leg, it is necessary to look at the *actunitaid* for each constituent member and determine if they are from the same leg.

The following example demonstrates how a constituent member list is displayed for a **PATHDRI** protection type:

```
RTRV-PROTN-GRP:LT-WBM:1-1-t04-w-10-1-25:123456::PATHDRI;

   LT-WBM 01-08-15 08:00:00
M  123456 COMPLD
   "1-1-t04-w-10-1-
25:protype=PATHDRI,hte=ENABLE,rme=ENABLE,dripathp=path2,wkg=1-1-t04-e
-08-1-25,protn=1-1-u-#-06-1-1"
   "1-1-t04-w-10-1-25,CML:cst=STS1,swreq=NR,actunit=WKG,actuni
taid=1-1-t04-e-08-1-25,wkgsiglvl=NONE,protnsiglvl=NONE"
   "1-1-t04-w-10-1-26,CML:cst=STS1,swreq=NR,actunit=PROTN,actu
nitaid=1-1-t04-e-08-1-26,wkgsiglvl=SF,protnsiglvl=NONE"
   "1-1-t04-w-10-1-27,CML:cst=STS1,swreq=NR,actunit=WKG,actuni
taid=1-1-t04-e-08-1-27,wkgsiglvl=NONE,protnsiglvl=NONE"
   "1-1-t04-w-10-1-28,CML:cst=STS3C,swreq=SF,actunit=PROTN,actunitaid
=1-1-u-#-06-1-4,wkgsiglvl=SF,protnsiglvl=NONE"
   "1-1-t04-w-10-1-31,CML:cst=STS1,swreq=SD,actunit=PROTN,actunitaid=
1-1-u-#-06-1-7,wkgsiglvl=SD,protnsiglvl=NONE"
   "1-1-t04-w-10-1-32,CML:cst=STS1,swreq=NR,actunit=WKG,actuni
taid=1-1-t04-e-08-1-32,wkgsiglvl=NONE,protnsiglvl=NONE"
   "1-1-t04-w-10-1-33,CML:cst=STS1,swreq=NR,actunit=WKG,actuni
taid=1-1-t04-e-08-1-33,wkgsiglvl=NONE,protnsiglvl=NONE"
   "1-1-t04-w-10-1-34,CML:cst=STS1,swreq=NR,actunit=WKG,actuni
taid=1-1-t04-e-08-1-34,wkgsiglvl=NONE,protnsiglvl=NONE"
   "1-1-t04-w-10-1-35,CML:cst=STS1,swreq=NR,actunit=PROTN,actu
nitaid=1-1-t04-e-08-1-35,wkgsiglvl=NONE,protnsiglvl=NONE"
   "1-1-t04-w-10-1-36,CML:cst=STS1,swreq=NR,actunit=WKG,actuni
taid=1-1-t04-e-08-1-36,wkgsiglvl=NONE,protnsiglvl=NONE"
;
```

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 3-252. 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 3-252. 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** ■ **PATHDRI** (starting in Release 4.0.1) ■ **1xNELEC** ■ **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 3-253. RTRV-PROTN-LST Output Parameters

Parameter Name	Description
aid	Protection group AID.
spec_block	See the following table for all *spec_block* parameters.

Table 3-254. 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
	■ PATHDRI (starting in Release 4.0.1)	logical tributary AID
	■ 1xNELEC	circuit pack AID
	■ A value of \"\" denotes an empty value.	\"\"
protype	Protection type.	
		1+1
		2F
		PATHDRI
		EQPTTMG
		EQPTSWFBR

Table 3-254. RTRV-PROTN-LST *spec_block* Parameters (Sheet 2 of 2)

Parameter	Description / PROTYPE	Value
west	West Group Member.	See *east*.
wkg	Working Group Member. This parameter is applicable to the following *protypes*:	
	■ 1+1	port AID
	■ 1xNELEC	circuit pack AID (note 1)
	■ PATHDRI (starting in Release 4.0.1)	logical trib AID
	■ A value of \"\" denotes an empty value.	\"\"

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

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 3-255. 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 3-256. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 4.0

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 3-257. RTRV-PROTN-TYPE 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 3-257. RTRV-PROTN-TYPE Input Parameters (Sheet 2 of 2)

Parameter Name	Description
protype	Protection Type. Value(s): ■ **PATHDRI**.

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 3-258. 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 3-259. RTRV-PROTN-TYPE *spec_block* Output Parameters

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. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

Table 3-260. Syntax of **RTRV-rr**

Command Syntax	
RTRV-ALL	:*tid:aid:ctag*; (starting in Release 2)
RTRV-EC1	:*tid:aid:ctag*; (starting in Release 3)
RTRV-OC3	:*tid:aid:ctag*; (starting in Release 2)
RTRV-OC12	:*tid:aid:ctag*; (starting in Release 2)
RTRV-OC48	:*tid:aid:ctag*; (starting in Release 2)
RTRV-OC192	:*tid:aid:ctag*; (starting in Release 3)
RTRV-STS1	:*tid:aid:ctag*; (starting in Release 2)

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 3-261. `RTRV-rr` 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.
ALL	***aid***	Access Identifier (starting in Release 2). Values: ■ port AID ■ tributary AID ■ An AID range is allowed up to the shelf level. See the AID table in OSEG Appendix A.
EC1	***aid***	Access Identifier (starting in Release 3). Values: ■ electrical 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.
OC3	***aid***	See OC48 (starting in Release 2).
OC12	***aid***	See OC48 (starting in Release 2).
OC48	***aid***	Access Identifier. Values: ■ port AID of a SONET port ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
OC192	***aid***	See OC48 (starting in Release 3).
STS1	***aid***	Access Identifier (starting in Release 2). Values: ■ tributary AID of a SONET tributary ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A. [The **`ED-STS1`** command is also applicable to STS3c and other concatenated tributary signals.]

Table 3-261. RTRV-rr Input Parameters (Sheet 2 of 2)

rr	Parameter Name	Description
T3	***aid***	Access Identifier. Values: ■ electrical 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.
	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 **RTRV-OCn.** The **rr** column identifies the **RTRV-rr** command.

If *eif* is equal to DS3, then the **RTRV-EC1** command will be DENY'd. For this case, first use **ED-T3** to change *eif* to EC1.

Table 3-262. RTRV-OCn Output Parameters

rr	Parameter Name	Description
EC1	*aid*	Access Identifier (starting in Release 3). Values: ■ electrical port AID.
OC3	*aid*	See OC48 (starting in Release 2).
OC12	*aid*	See OC48 (starting in Release 2).
OC48	*aid*	Access Identifier. Values: ■ port AID of a SONET port.
OC192	*aid*	See OC48 (starting in Release 3).
	spec_block	The following are the *spec_block* parameters.

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 1 of 11)

rr	Parameter Name	Description
OC192	*als*	Automatic Laser Shutdown (starting in Release 5). Enable/Disable the automatic laser shutdown procedure. ALS procedure switches off the laser during a fiber cut. Values: ■ ENABLE ■ DISABLE (initial value).
OC3	*crstat*	See OC48 (starting in Release 3).
OC12	*crstat*	See OC48 (starting in Release 3).

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 2 of 11)

rr	Parameter Name	Description
OC48	*crstat*	Constituent Rates Status List (starting in Release 3). This parameter shows the rate of the port's signals. Values: See *inputsig*. C*rstat* is only displayed for *trbmd* equal to ADAPTIVE. 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.
OC192	*crstat*	See OC48 (starting in Release 3).
OC3	*dccstat*	See OC48 (starting in Release 2.0).
OC12	*dccstat*	See OC48 (starting in Release 2.0).
OC48	*dccstat*	Section DCC Status. This identifies the Section DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 4.0, *dccstat* is obsolete.
OC192	*dccstat*	See OC48 (starting in Release 3.0).
EC1	*eif*	Electrical Interface Type (starting in Release 3). This shows what type of input the port has been provisioned to receive. Values: ■ DS3 (initial value) ■ EC1. Even though *eif* can have the value of DS3, **RTRV-EC1** will not display this value because the **RTRV-EC1** command will be DENY'd if *eif*=DS3.
EC1	*emi*	See OC48 (starting in Release 3).
OC3	*emi*	See OC48 (starting in Release 2).
OC12	*emi*	See OC48 (starting in Release 2).

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 3 of 11)

rr	Parameter Name	Description
OC48	*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.
OC192	*emi*	See OC48 (starting in Release 3).
EC1	*faclpbkstat*	See OC48 (starting in Release 5).
OC3	*faclpbkstat*	See OC48 (starting in Release 5).
OC12	*faclpbkstat*	See OC48 (starting in Release 5).
OC48	*faclpbkstat*	Facility Loopback Status (Starting in Release 5). Values: ■ NO (initial value) ■ NSF - Near-Side Facility loopback for electrical/optical ports ■ FSF - Far-Side Facility loopback for electrical/optical ports.
OC192	*fec*	FEC Mode Enable (starting in Release 3). Values: ■ ENABLE (initial value) ■ DISABLE.
OC192	*feccor*	FEC Correction Enable (starting in Release 3). Values: ■ ENABLE (initial value) ■ DISABLE.
OC192	*fectype*	FEC Type (starting in Release 4). Values: ■ INBAND (initial value) ■ OUTBAND.
EC1	*felpm*	See OC48 (starting in Release 3).
OC3	*felpm*	See OC48 (starting in Release 3).
OC12	*felpm*	See OC48 (starting in Release 3).

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 4 of 11)

rr	Parameter Name	Description
OC48	*felpm*	Far-End Line PM Enable (starting in Release 3). It indicates if the performance monitoring feature is enabled or disabled. Values: ■ ENABLE ■ DISABLE (initial value).
OC192	*felpm*	See OC48 (starting in Release 3).
OC3	*frcdus*	See OC48 (starting in Release 4).
OC12	*frcdus*	See OC48 (starting in Release 4).
OC48	*frcdus*	Force DUS for sync messaging on optical interfaces (starting in Release 4). When provisioned for ENABLE, the message “do not use” will be transmitted from that optical interface. Values: ■ ENABLE ■ DISABLE (initial value).
OC192	*frcdus*	See OC48 (starting in Release 4).
OC3	*inputsig*	See OC48 (starting in Release 2).
OC12	*inputsig*	See OC48 (starting in Release 2).
OC48	*inputsig*	Tributary Input Signal Rate List. This parameter is a list of STS 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 1, 3, or 12 representing STS1, STS3C, or STS12C. The initial value of X is 1 and the initial value of N is the line rate. Example: for an OC-48 port, the initial value is 481. Example: an OC-48 signal might be represented by 91-13-112-241 which implies 9 STS1s, 1 STS3C, 1 STS12C, 24 STS1s. If *trbmd* is FIXED, then *inputsig* constrains the cross-connection rates that can be entered for the port. If *trbmd* is ADAPTIVE, then *inputsig* should not be used. Starting in Release 2.0, X may have the value 48 which represents STS48C.
OC192	*inputsig*	See OC48 (starting in Release 3). Starting in Release 5.0, X may have the value 192 which represents STS192C.

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 5 of 11)

rr	Parameter Name	Description
OC192	*laser*	Provisioned laser state (starting in Release 5). Values: ■ OFF ■ ON (initial value).
OC192	*laseractl*	Actual laser state (starting in Release 5). Values: ■ OFF ■ ON ■ ON2SECONDS ■ ON90SECONDS.
OC3	*ldccstat*	See OC48 (starting in Release 2.0).
OC12	*ldccstat*	See OC48 (starting in Release 3.0).
OC48	*ldccstat*	Line DCC Status (starting in Release 3.0). This identifies the Line DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 4.0, *ldccstat* is obsolete.
OC192	*ldccstat*	See OC48 (starting in Release 3.0).
OC192	*oatasc*	OAT Association (starting in Release 5). It indicates the Optical Amplifier Transmitter that is associated with this port. Value: ■ slot AID. ■ NONE Starting in Release 6.0.5, the *oatasc* parameter is no longer supported.
OC3	*opdis*	See OC48 (starting in Release 2).
OC12	*opdis*	See OC48 (starting in Release 2).

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 6 of 11)

rr	Parameter Name	Description
OC48	*opdis*	Optical Distance. It shows the type of application for which the optical transmitter on this port is suited. Values: ■ INTRA-OFFICE ■ SHORT-HAUL ■ LONG-HAUL. 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. Starting in Release 4.0, the above values will be replaced by numerical values whose units are in km.
OC192	*opdis*	See OC48 (starting in Release 3).
OC3	*opwl*	See OC48 (starting in Release 2).
OC12	*opwl*	See OC48 (starting in Release 2).
OC48	*opwl*	Optical Wavelength 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.
OC192	*opwl*	See OC48 (starting in Release 3).
OC48	*phypm*	Physical PM Enable (starting in Release 3). This parameter indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE (initial value) ■ DISABLE.
OC192	*phypm*	See OC48 (starting in Release 3).
OC48	*phytca*	Physical TCA (starting in Release 3). 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 5.0, the Default0 profile will be changed to NotReported.

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 7 of 11)

rr	Parameter Name	Description
OC192	*phytca*	See OC48.
EC1	*pmode*	See OC48 (starting in Release 3).
OC3	*pmode*	See OC48 (starting in Release 2).
OC12	*pmode*	See OC48 (starting in Release 2).
OC48	*pmode*	Port Mode. This indicates the status of the port. 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.
OC192	*pmode*	See OC48 (starting in Release 3).
EC1	*ptype*	See OC48 (starting in Release 3).
OC3	*ptype*	See OC48 (starting in Release 2).
OC12	*ptype*	See OC48 (starting in Release 2).
OC48	*ptype*	Port Type. This identifies the port type of the AID. Values: See the valid values of "rr" for **RTRV-rr**.
OC192	*ptype*	See OC48 (starting in Release 3).
EC1	*sdthr*	See OC48 (starting in Release 3).
OC3	*sdthr*	See OC48 (starting in Release 2).
OC12	*sdthr*	See OC48 (starting in Release 2).
OC48	*sdthr*	Signal Degrade Threshold. This sets the BER threshold for the optical signal. Values (as exponents of 10): ■ -5 ■ -6 (initial value10^{-6}) ■ -7 ■ -8 ■ -9.

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 8 of 11)

rr	Parameter Name	Description
OC192	*sdthr*	See OC48 (starting in Release 3).
EC1	*sfthr*	See OC48 (starting in Release 3).
OC3	*sfthr*	See OC48 (starting in Release 2).
OC12	*sfthr*	See OC48 (starting in Release 2).
OC48	*sfthr*	Signal Failure Threshold. This shows the excessive BER threshold for the optical signal. Values (as exponents of 10): ■ -3 (initial value10^{-3}) ■ -4 ■ -5.
EC1	*sigmis*	DS3/EC1 Signal Type Mismatch (starting in Release 4). This parameter indicates whether a signal mismatch exists at this electrical interface. If the incoming signal is an EC1 type, the value will be NORMAL. If it is a DS3 type, the value will be MISMATCH. Values: ■ NORMAL ■ MISMATCH ■ NA. 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.
OC192	*sfthr*	See OC48 (starting in Release 3).
EC1	*sltca*	See OC48 (starting in Release 3).
OC3	*sltca*	See OC48 (starting in Release 3).
OC12	*sltca*	See OC48 (starting in Release 3).
OC48	*sltca*	Section and Line TCA (starting in Release 2). This parameter points a PM section and line TCA profile name to the designated AID. Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value).

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 9 of 11)

rr	Parameter Name	Description
		Starting in Release 5.0, the Default0 profile will be changed to NotReported.
OC192	*sltca*	*sltca* See OC48 (starting in Release 3).
EC1	*snelpm*	See OC48 (starting in Release 3).
OC3	*snelpm*	See OC48 (starting in Release 3).
OC12	*snelpm*	See OC48 (starting in Release 3).
OC48	*snelpm*	Section and Near-End Line PM Enable (starting in Release 3). It indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE (initial value) ■ DISABLE.
OC192	*snelpm*	See OC48 (starting in Release 3).
EC1	*sonet*	See OC48 (starting in Release 3).
OC3	*sonet*	See OC48 (starting in Release 3).
OC12	*sonet*	See OC48 (starting in Release 3).
OC48	*sonet*	SONET Alarm Severity Assignment Profile (starting in Release 3). This parameter sets a SONET ASAP profile name to which the designated AID points. Value: ■ Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.
OC192	*sonet*	See OC48 (starting in Release 3).
OC3	*strc*	See OC48 (starting in Release 5).
OC12	*strc*	See OC48 (starting in Release 5).
OC48	*strc*	Section Trace. 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). ■ NA - not available

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 10 of 11)

rr	Parameter Name	Description
		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 value NA will be returned as and the *strcrfmt* will return the value UNAVAILABLE.
OC192	*strc*	See OC48 (starting in Release 5).
OC3	*strcrfmt*	See OC48 (starting in Release 5).
OC12	*strcrfmt*	See OC48 (starting in Release 5).
OC48	*strcrfmt*	Starting in Release 5, 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.
OC192	*strcrfmt*	See OC48 (starting in Release 5).
OC3	*strcwfmt*	See OC48 (starting in Release 5).
OC12	*strcwfmt*	See OC48 (starting in Release 5).
OC48	*strcwfmt*	Starting in Release 5, 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.
OC192	*strcwfmt*	See OC48 (starting in Release 5).
OC3	*strcout*	See OC48 (starting in Release 5).
OC12	*strcout*	See OC48 (starting in Release 5).

Table 3-263. RTRV-OCn Output *spec_block* Parameters (Sheet 11 of 11)

rr	Parameter Name	Description
OC48	*strcout*	Outgoing Section Trace. This identifies the section trace message that was provisioned to be transmitted. Beginning with Release 5, 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.
OC192	*strcout*	See OC48 (starting in Release 5).
OC3	*trbmd*	See OC48 (starting in Release 4.0.1).
OC12	*trbmd*	See OC48 (starting in Release 4.0.1).
OC48	*trbmd*	Tributary Mode (starting in Release 4). The initial value is set with the *trbmddflt* parameter in the **ED-EQPT** command. Values: ■ ADAPTIVE ■ FIXED. If the mode is FIXED, then the port can only carry specific constituent signal rates. For this case, *inputsig* constrains the cross-connection rates that should be entered for the port. If the mode is ADAPTIVE, then *inputsig* has no effect; that is, it does not constrain the constituent rates. The actual constituent rates are indicated by *crstat*.
OC192	*trbmd*	See OC48 (starting in Release 4.0.1).
OC3	*unequiposig*	See OC48 (starting in Release 2).
OC12	*unequiposig*	See OC48 (starting in Release 2).
OC48	*unequiposig*	Tributary Unequipped Output Signal Rate List (starting in Release 2). This parameter is a list of STS 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*.
OC192	*unequiposig*	See OC48 (starting in Release 3).

The table that follows describes the output parameters for **RTRV-STS1.** The **RTRV-STS1** command is also applicable to STS3c 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 3-264. `Tributary` Output Parameters

rr	Parameter Name	Description
STS1	*aid*	Access Identifier. Values: ■ tributary AID of an SONET 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 3-265. `Tributary` Output *spec_block* Parameters (Sheet 1 of 4)

rr	Parameter Name	Description
STS1	*crslpbkrate*	Cross-Connection Loopback Rate (starting in Release 3). Values: ■ STS1 ■ STS3C ■ STS12C ■ STS48C ■ NA.
STS1	*crslpbkstat*	Cross-Connection Loopback Status (starting in Release 3). Values: ■ YES ■ NO.

Table 3-265. `Tributary` Output *spec_block* Parameters (Sheet 2 of 4)

rr	Parameter Name	Description
STS1	*degthr*	Path BER Threshold (starting in Release 4). Values: (as exponents of 10) ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9.
STS1	*dexcthr*	Excessive Degrade Threshold (starting in Release 4). This is more severe than *degthr*, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5.
STS1	*msdexc*	Multiplex Section DEXC Threshold (starting in Release 2.0). Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5. The parameter *msdexc* is replaced in Release 4 by *dexcthr*.
STS1	*ppm*	Path PM Enable (starting in Release 2). This parameter 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).
STS1	*pse*	PDI-P Switching Enable (starting in Release 4.0.1). Values: ■ ENABLE (initial value) ■ DISABLE.

Table 3-265. `Tributary` Output *spec_block* Parameters (Sheet 3 of 4)

rr	Parameter Name	Description
STS1	*ptca*	Path TCA Profile Pointer (starting in Release 3). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value). Starting in Release 5.0, the Default0 profile will be changed to NotReported.
STS1	*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). ■ 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.
STS1	*ptrcrfmt*	Starting in Release 2, 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. ■ UNAVAILABLE No valid incoming path trace is available.

Table 3-265. `Tributary` Output *spec_block* Parameters (Sheet 4 of 4)

rr	Parameter Name	Description
STS1	*siglb*	Signal Label (starting in Release 2). This parameter shows the value of Signal Label on the incoming SONET path overhead C2 byte of a non-terminated STS-1 tributary. 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.
STS1	*tmonmd*	Tributary Monitoring Mode (starting in Release 2). This indicates the mode of the tributary. Values: ■ MON Indicates that alarm monitoring is taking place on the tributary. ■ NMON Means that alarm monitoring is not occurring on the tributary.
STS1	*tribsonetpn*	Tributary Alarm Severity Assignment Profile (ASAP). This parameter is available starting in Release 2. 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”.

The table that follows describes the output parameters for **`RTRV-T3`**.

If *eif* is equal to EC1, then the **`RTRV-T3`** command will be DENY'd. For this case, first use **`ED-EC1`** to change *eif* to DS3.

Table 3-266. RTRV-T3 Output Parameters

rr	Parameter Name	Description
T3	*aid*	Access Identifier. Values: ■ electrical port AID.
	spec_block	The following are the *spec_block* parameters.

Table 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 1 of 8)

rr	Parameter Name	Description
T3	*cbitmis*	DS3 C-bit Signal Format Mismatch (starting in Release 3). This parameter will show a MISMATCH value if the DS3 port were provisioned for C-bit parity format, but it actually receives a different type of DS3 format. Otherwise, it will show the value NORMAL. Values: ■ NORMAL ■ MISMATCH ■ 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.
T3	*crslpbkstat*	Cross-Connection Loopback Status (starting in Release 3). Values: ■ YES ■ NO.
T3	*ds3in*	DS3 Input Port Alarm Severity Assignment Profile (ASAP). This parameter displays a DS3 input port ASAP profile name to which the designated AID points. Value: ■ Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”.

Table 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 2 of 8)

rr	Parameter Name	Description
T3	*ds3out*	DS3 Output Port Alarm Severity Assignment Profile (starting in Release 3). This parameter displays a DS3 output port ASAP profile name to which the designated AID points. See the **RTRV-ASAP-PROF** command for details about ASAP. Value: ■ Alphanumeric string with a maximum of 24 characters. The initial profile is named “Default”. If the profile type of the port is changed, then the profile name is reset to Default.
T3	*eif*	Electrical Interface Type (starting in Release 3). This shows what type of input the port has been provisioned to receive. Values: ■ DS3 (initial value) ■ EC1. Even though *eif* can have the value of EC1, **RTRV-T3** will not display this value because the **RTRV-T3** command will be DENY'd if *eif*=EC1.
T3	*faclpbkstat*	Facility Loopback Status (Starting in Release 5). Values: ■ NO (initial value) ■ NSF Near-Side Facility loopback for electrical/optical ports ■ FSF Far-Side Facility loopback for electrical/optical ports ■ NA - not available.

Table 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 3 of 8)

rr	Parameter Name	Description
T3	*fmt*	DS3 Signal Format. This shows the format for the DS3 signal. Values: ■ C-BIT (initial value) This supports a C-bit parity channelized DS3 format. It may support full P-bit parity VMR, VM, or no VM monitoring. It may also use full C-bit parity monitoring. ■ M23 This supports the M23 channelized DS3 format. It may support full P-bit parity VMR, VM, or no VM monitoring. The C-bit monitoring is disabled for this format. ■ FRAMED This supports the standard M-frame DS3 format. It may be channelized or unchannelized. It may support full P-bit parity VMR, VM, or no VM monitoring. ■ UNFRAMED-CC When UNFRAMED and CLEAR-CHANNEL format has been set, the system disables P-bit parity VMR, VM, and C-BIT PARITY monitoring.
T3	*inpm*	DS3 Incoming PM Enable (starting in Release 3). This enables/disables the incoming DS3 parameters performance monitoring. Values: ■ ENABLE ■ DISABLE (initial value).
T3	*itca*	Incoming DS3 PM TCA (starting in Release 3). This parameter points an incoming DS3 PM TCA profile name to the designated AID. Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value). Starting in Release 5.0, the Default0 profile will be changed to NotReported.

Table 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 4 of 8)

rr	Parameter Name	Description
T3	*otca*	Outgoing DS3 PM TCA (starting in Release 3). This parameter points an outgoing DS3 PM TCA profile name to the designated AID. Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value). Starting in Release 5.0, the Default0 profile will be changed to NotReported.
T3	*outmntc*	DS3 Outgoing Maintenance Signal. Determines whether an AIS or IDLE signal is transmitted in response to an unconnected input. Starting in Release 5.0, the values are: ■ AIS (initial value) ■ IDLE.
T3	*outpm*	DS3 Outgoing PM Enable (starting in Release 3). This parameter indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE ■ DISABLE (initial value).
T3	*pdir*	DS3 Port Directionality. This parameter shows if the DS3 port has been provisioned to operate in bidirectional or unidirectional mode. Values: ■ BIDIR (initial value) ■ UNIDIR-TRM ■ UNIDIR-RCV.
T3	*pmode*	Port Mode. This indicates the status of the port. 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.

Table 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 5 of 8)

rr	Parameter Name	Description
T3	*pmsesl*	PM Threshold (errors in a second) for declaring SES - Line (starting in Release 3). Values: ■ 44 (initial value) ■ 2444.
T3	*pmsesp*	PM Threshold (errors in a second) for declaring SES - Path (starting in Release 3). Values: ■ 44 (initial value) ■ 2444.
T3	*pmsespfe*	PM Threshold (errors in a second) for declaring Far-End SES - Path (starting in Release 3). Values: ■ 44 (initial value) ■ 2444.
T3	*ptffmcrs*	PTF FM Cross-Connection Dependency (starting in Release 3.0). Values: ■ YES (initial value) ■ NO.
T3	*ptfpm*	PTF PM Enable (starting in Release 4). It indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE ■ DISABLE (initial value).
T3	*ptftca*	PTF TCA Profile Pointer (starting in Release 4). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value). Starting in Release 5.0, the Default0 profile will be changed to NotReported.

Table 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 6 of 8)

rr	Parameter Name	Description
T3	*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 of the trace 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 of the trace is 62 0x00's (the ASCII null character) followed by a carriage return, line feed.
T3	*ptype*	Port Type. This identifies the port type of the AID. Value(s): ■ T3.
T3	*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.
T3	*sdthr*	Signal Degrade Threshold. This shows the BER threshold of the electrical DS-3 signal. Values (as exponents of 10): ■ -4 ■ -6. The initial value is 10^{-6}. The value of -4 is actually 4 x 10^{-4} BER. The values range has been enhanced to: 1E-3, 1E-4, 4E-4, 1E-5, 1E-6, 1E-7, 1E-8, 1E-9.

Table 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 7 of 8)

rr	Parameter Name	Description
T3	*sigmis*	DS3/EC1 Signal Type Mismatch (starting in Release 3). This parameter indicates whether a signal mismatch exists at this electrical interface. If the incoming signal is a DS3 type, the value will be NORMAL. If it is an EC1 type, the value will be MISMATCH. Values: ■ NORMAL ■ MISMATCH ■ 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.
T3	*tmonmd*	Tributary monitoring mode (starting in Release 3). This parameter sets the tributary monitoring 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.
T3	*trc*	Outgoing Path Trace. This identifies the path trace message that was provisioned 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 *ptrcwfmt* parameter. See *ptrcwfmt* for the initial value of *trc.*
T3	*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 3-267. RTRV-T3 Output *spec_block* Parameters (Sheet 8 of 8)

rr	Parameter Name	Description
T3	*vmr*	DS3 Violation Monitoring Mode. This parameter supports the DS3 P-bit parity violation monitoring and removal. Values: ■ VMR ■ VM ■ NO-VM (initial value).

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1 and P2

Beginning with Release 4.0, 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 does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-268. 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:

Table 3-268. RTRV-STATE-EQPT Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ system AID ■ shelf AID The keyword “all” is allowed in the AID. ■ 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 3-269. 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 3-270. RTRV-STATE-EQPT *spec_block* Output Parameters
(Sheet 1 of 4)

Parameter Name	Description
avlst	Availability Status. This parameter is available starting in Release 2. 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 5. Values: ■ IS ■ OOS. This parameter is reported for a circuit pack AID.
flaccp	Flashdisk Acceptability. This parameter is available starting in Release 2. 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 2. This parameter is reported for a memory circuit pack AID (including SYS50DM). Values: ■ EMPTY ■ VALID.

Table 3-270. RTRV-STATE-EQPT *spec_block* Output Parameters
(Sheet 2 of 4)

Parameter Name	Description
holdst	Holder Status. This parameter is available starting in Release 2. 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 2. This parameter is reported for a system AID. Values: ■ Y ■ N.
opstate	Operational State. This parameter is available starting in Release 2. Values: ■ ENABLE ■ DISABLE. This parameter is reported for a circuit pack AID.

Table 3-270. RTRV-STATE-EQPT *spec_block* Output Parameters
(Sheet 3 of 4)

Parameter Name	Description
procst	Procedural Status. This parameter is available starting in Release 2. 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 2. 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 4.0.1. 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 is available starting in Release 3. 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 3-270. 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 6. 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 3. 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 6. 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"
;
```

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

RMV-EQPT

RST-EQPT

RTRV-EQPT

NAME

RTRV-SYNCN: Retrieve Synchronization

The **RTRV-SYNCN** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

Beginning with Release 5.0, 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 3-271. 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 3-271. 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 3-272. RTRV-SYNCN *spec_block* Input Parameters (Sheet 1 of 2)

Parameter Name	Description
syncref	Starting with Release 2, 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 4.0, this parameter can also have an additional value. Value(s): ■ **LINE2**. Starting with Release 5.0, all six line references are available and this parameter can also have values: ■ **LINE3** ■ **LINE4** ■ **LINE5** ■ **LINE6**.

Table 3-272. RTRV-SYNCN *spec_block* Input Parameters (Sheet 2 of 2)

Parameter Name	Description
systmg	Starting with Release 2, this parameter refers to system timing AID. Values: ■ **YES** (default) All output parameters related to system timing are returned. ■ **NO**.
tinpaid1	Starting with Release 2, this parameter is timing input port AID. Value(s): ■ **EXTTMG0**.
tinpaid2	Starting with Release 2, this parameter is timing input port AID. Value(s): ■ **EXTTMG1**.
toutpaid1	Starting with Release 2, this parameter is Timing Output Port AID. Value(s): ■ **EXTTMG0_OUT**.
toutpaid2	Starting with Release 2, this parameter is Timing Output Port AID. Value(s): ■ **EXTTMG1_OUT**.

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 3-273. 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 3-274. RTRV-SYNCN *spec_block* Output Parameters for Retrieving System Timing (Sheet 1 of 5)

Parameter Name	Description
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 6, 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 ■ line1 ■ line2 (starting in Release 4.0) ■ line3 (starting in Release 5.0) ■ line4 (starting in Release 5.0) ■ line5 (starting in Release 5.0) ■ line6 (starting in Release 5.0)

Table 3-274. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving System Timing (Sheet 2 of 5)

Parameter Name	Description
	■ EXTREF1 ■ EXTREF2
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.
clksw_stat	Starting in Release 2, 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

Table 3-274. RTRV-SYNCN *spec_block* Output Parameters for Retrieving System Timing (Sheet 3 of 5)

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: ■ 3
syncmsg	System SSM (Sync. Status Messaging) Mode. Starting in Release 4.0, 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 “STU” (Synchronised Tracability Unknown) will be transmitted from the optical interface.

Table 3-274. RTRV-SYNCN *spec_block* Output Parameters for Retrieving System Timing (Sheet 4 of 5)

Parameter Name	Description
sysql_stat	System Quality Level (QL) (starting in Release 1.0). This is the overall system timing quality level. Values: ■ STU ■ ST3 ■ DUS ■ PRS (starting in Release 4.0) ■ ST2 (starting in Release 4.0).
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.
tcs1	This parameter defines the Cable 1 Timing Collection Source. It specifies shelf AIDs for line references for both line timing references and output references. Values: ■ NO-CONNECTION ■ shelf AID. This parameter is not used in single shelf system but is used for multi-shelf system. The shelf designation refers to the high-speed shelf. Starting in Release 4.0, the use of this parameter is discontinued.
timing	Starting in Release 5, 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.

Table 3-274. RTRV-SYNCN *spec_block* Output Parameters for Retrieving System Timing (Sheet 5 of 5)

Parameter Name	Description
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).
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 3-275. 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 3-276. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 1 of 8)

Parameter Name	Description
inqld1	Assigned Timing Reference QL Value. Starting in Release 4, this parameter shows the synchronization messaging quality level value for timing reference of the external timing input port 1. Values: ■ PRS ■ STU ■ ST2 ■ ST3 ■ DUS ■ NULL — Starting in Release 5.0 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 4, 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 4.0, these are the input synchronization status messaging that are received on **line1** timing reference.

Table 3-276. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 2 of 8)

Parameter Name	Description
	Values: ■ PRS ■ STU ■ ST2 ■ ST3 ■ DUS ■ NULL — Starting in Release 5.0 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 5.0, this parameter shows the synchronization messaging quality level value for timing reference of the external timing input port 3. Values: ■ PRS ■ STU ■ ST2 ■ ST3 ■ DUS ■ NULL — Starting in Release 5.0 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 3-276. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 3 of 8)

Parameter Name	Description
inqll1_stat	Input QL status for **line1**. Starting in Release 4, 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 4.0, this parameter is the provisioned quality level sync message that overrides what is received for **extref1**. Values: ■ AUTO ■ PRS ■ STU ■ ST2 ■ ST3
qld2_prov	Same as *qld1_prov*, except it is for **extref2**.

Table 3-276. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 4 of 8)

Parameter Name	Description
qll1_prov	QL Provisioned. Starting in Release 4.0, this parameter is the provisioned quality level sync message that overrides what is received for **line1**. Values: ■ AUTO Implies sync message support. ■ PRS ■ STU ■ ST2 ■ ST3
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 3-276. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 5 of 8)

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 3-276. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 6 of 8)

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**.
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 4.0) ■ 5 through 8 — (starting in Release 5.0).
syncrefd2_pri	Same as *syncrefd1_pri*, except it is for **extref2**.

Table 3-276. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 7 of 8)

Parameter Name	Description
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. ■ 3 — (starting in Release 4.0) ■ 4 — (starting in Release 4.0) ■ 5 through 8 — (starting in Release 5.0)
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**.

Table 3-276. RTRV-SYNCN *spec_block* Output Parameters for Retrieving Assigned Timing Reference (Sheet 8 of 8)

Parameter Name	Description
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.
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 3-277. 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 3-278. RTRV-SYNCN *spec_block* Output Parameters for Retrieving Port (Sheet 1 of 4)

Parameter Name	Description
ext1_equ	Starting in Release 3, this indicates the timing output equalization to adjust the first timing reference output signal power. The following values are represented by percentage. Values: ■ 20 ■ 40 ■ 60 ■ 80 ■ 100.
ext2_equ	Same as *ext1_equ*, except it is for second output.
ext1_if	Starting in Release 1.0, this parameter indicates the **extref1** input signal format. Value(s): ■ ESF ■ SF (starting in Release 4.0)
ext2_if	Same as *ext2_if*, except it is for **extref2**.
ext1_of	Starting in Release 1.0, this parameter indicates the **extref1** output signal format. Values: ■ ESF ■ SF
ext2_of	Same as *ext1_of*, except it is for **extref2**.

Table 3-278. RTRV-SYNCN *spec_block* Output Parameters for Retrieving Port (Sheet 2 of 4)

Parameter Name	Description
ext1out_en	External timing output enabling/disabling. Starting in Release 1.0, this parameter specifies whether the first external timing output is enabled or disabled. Values: ■ ENABLE ■ DISABLE.
ext2out_en	Same as *ext1out_en*, except it is for second output.
ext1out_prov	Starting in Release 1.0, this parameter is related to timing output signals. It connects or disconnects derived external timing output source selection for the first output. The value is set via *extout_prov* of **SET-SYNCN**. Value(s): ■ NO-CONNECTION Starting in Release 5.0, 'NO_CONNECTION' is not a valid value. ■ **line1** ■ **line2** (starting in Release 5.0).
ext2out_prov	Same as *ext1out_prov*, except it is for second output.
ext1out_sig_ stat	Starting in Release 3, 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.
ext2out_sig_ stat	See *ext1out_sig_stat.*

Table 3-278. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Port (Sheet 3 of 4)

Parameter Name	Description
extout1_ssm	Starting in Release 5.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.
extout2_ssm	See *extout1_ssm.*
frcdus1	Starting in Release 5, this parameter is Sync Message Force DUS Enable. Values: ■ ENABLE ■ DISABLE.
frcdus2	See *frcdus1.*
ql1_in	QL In. Starting in Release 6.1.5, this parameter is the incoming QL for the exttmg0 station clock port. Values: ■ PRS ■ STU ■ ST2 ■ ST3 ■ DUS ■ NULL (this value is returned when incoming signal is not valid similar to *inqld1*)
ql2_in	QL In. Starting in Release 6.1.5, 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 5.0, this parameter is the QL for the **EXTTMG0_OUT** timing output port.

Table 3-278. `RTRV-SYNCN` *spec_block* Output Parameters for Retrieving Port (Sheet 4 of 4)

Parameter Name	Description
	Values: ■ PRS ■ STU ■ ST2 ■ ST3 ■ DUS. ■ NULL (this value is returned indicates that the signal is not valid e.g. when incoming signal is disabled or when AIS is sent)
ql2_out	QL Out. Starting in Release 5.0, this parameter is the QL for the **EXTTMG1_OUT** timing output port. See *ql1_out* for values.
qlout1_tais	Acceptance QL for Output Threshold AIS. Starting in Release 5, 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 into the derived timing output depends on the setting of the *extout_ssm* parameter. Values: ■ PRS ■ STU ■ ST2 ■ ST3
qlout2_tais	See *qlout1_tais.*
tinpaid1	Starting in Release 2, this is external timing input port AID. Value(s): ■ **exttmg0**.
tinpaid2	Starting in Release 2, this is external timing input port AID. Value(s): ■ **exttmg1**.
toutpaid1	Starting in Release 2, this is external timing port out AID. Value(s): ■ **exttmg0_out**.
toutpaid2	Starting in Release 2, this is external timing port out AID. Value(s): ■ **exttmg1_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

OPR-SYNCNSW

RLS-SYNCNSW

SET-SYNCN

NAME

RTRV-TCA-ASGNMT: Retrieve TCA Assignment

The **RTRV-TCA-ASGNMT** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

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 3-279. 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 3-279. 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: ■ **DS3** ■ **ENET** ■ **PATH** ■ **PHYSICAL** ■ **SECTION-LINE**.
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 3-280. 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.
dirn	Direction. This parameter is only applicable to DS3 profile type. Values: ■ IN — Incoming PM to the DS3 facility. ■ OUT — Outgoing PM from the DS3 facility. ■ PTF — This parameter indicates terminated SONET/ SDH path PM profile. It will be reported only when the profile type is “path” or “HOVC path”.
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ DS3 ■ ENET ■ PATH ■ PHYSICAL ■ SECTION-LINE.
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 2.5G (OC-48)/10G (OC-192) (2-Fiber), 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 3-281. 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.
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values:

Table 3-281. RTRV-TCA-PROF Input Parameters (Sheet 2 of 2)

Parameter Name	Description
	■ **DS3** ■ **ENET** ■ **PATH** ■ **PHYSICAL** ■ **SECTION-LINE**.
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 “NotReported.” Value: This is an alphanumeric character string with a maximum of 24 characters. Starting in Release 5.0, 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 3-282. RTRV-TCA-PROF Output Parameters

Parameter Name	Description
pftype	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ DS3 ■ ENET ■ PATH ■ PHYSICAL ■ SECTION-LINE.
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 3-283. RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 1 of 6)

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 parameters belong to SECTION-LINE profile type.
qhcvsoc3	15-minute CV-S bin for OC-3. Range: 0-16777215 (140)
daycvsoc3	Day CV-S bin for OC-3. Range: 0-2147483647 **(1344)
qhcvsoc12	15-minute CV-S bin for OC-12. Range: 0-16777215 (560)
daycvsoc12	Day CV-S bin for OC-12. Range: 0-2147483647 ** (5376)
qhcvsoc48	15-minute CV-S bin for OC-48. Range: 0-16777215 (2240)
daycvsoc48	Day CV-S bin for OC-48. Range: 0-2147483647 ** (21504)
qhcvsoc192	15-minute CV-S bin for OC-192. Range: 0-16777215 (8960)
daycvsoc192	Day CV-S bin for OC-192. Range: 0-2147483647 ** (86016)

Table 3-283. RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 2 of 6)

Parameter Name	Description
qhess	15-minute ES-S bin. Range: 0-900 (25)
dayess	Day ES-S bin. Range: 0-86400 (250)
qhsess	15-minute SES-S bin. Range: 0-810 (10)
daysess	Day SES-S bin. Range: 0-77760 (40)
qhsefss	15-minute SEFS-S bin. Range: 0-900 (5)
daysefss	Day SEFS-S bin. Range: 0-86400 (10)
qhcvlec1	15-minute CV-L and CV-LFE bin for EC-1. Range: 0-16777215 * (47)
daycvlec1	Day CV-L and CV-LFE bin for EC-1. Range: 0-2147483647 ** (448)
qhcvloc3	15-minute CV-L and CV-LFE bin for OC-3. Range: 0-16777215 * (140)
daycvloc3	CV-L and CV-LFE bin for OC-3. Range: 0-2147483647 ** (1344)
qhcvloc12	15-minute CV-L and CV-LFE bin for OC-12. Range: 0-16777215 * (560)
daycvloc12	Day CV-L and CV-LFE bin for OC-12. Range: 0-2147483647 ** (5376)
qhcvloc48	15-minute CV-L and CV-LFE bin for OC-48. Range: 0-16777215 * (2240)
daycvloc48	Day CV-L and CV-LFE bin for OC-48. Range: 0-2147483647 ** (21504)
qhcvloc192	15-minute CV-L and CV-LFE bin for OC-192. Range: 0-16777215 * (8960)
daycvloc192	Day CV-L and CV-LFE bin for OC-192. Range: 0-2147483647 ** (86016)
qhesl	15-minute ES-L and ES-LFE bin. Range: 0-900 (25)

Table 3-283. RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 3 of 6)

Parameter Name	Description
dayesl	Day ES-L and ES-LFE bin. Range: 0-86400 (250)
qhsesl	15-minute SES-L and SES-LFE bin. Range: 0-810 (10)
daysesl	Day SES-L and SES-LFE bin. Range: 0-77760 (40)
qhfeccl	15-minute FECC-L OC-192 bin. Range: 0-5184000 (5184)
dayfeccl	Day FECC-L OC-192 bin. Range: 0-497664000 (497664)
qhfecul	15-minute FECU-L OC-192 bin. Range: 0-2592000 (2592)
dayfecul	Day FECU-L OC-192 bin. Range: 0-248832000 (248832)
qhuasl	15-minute UAS-L and UAS-LFE bin. Range: 0-900 (10)
dayuasl	Day UAS-L and UAS-LFE bin. Range: 0-86400 (10)
	The following parameters belong to PATH profile type:
qhcvpsts1	15-minute CV-P and CV-PFE bin for STS-1. Range: 0-65535 & (15)
daycvpsts1	Day CV-P and CV-PFE bin for STS-1. Range: 0-8388607 && (125)
qhcvpsts3c	15-minute CV-P and CV-PFE bin for STS-3c. Range: 0-65535 & (25)
daycvpsts3c	Day CV-P and CV-PFE bin for STS-3c. Range: 0-8388607 && (250)
qhcvpsts12c	15-minute CV-P and CV-PFE bin for STS-12c. Range: 0-16777215 * (75)
daycvpsts12c	Day CV-P and CV-PFE bin for STS-12c. Range: 0-2147483647 ** (750)
qhcvpsts48c	15-minute CV-P and CV-PFE bin for STS-48c. Range: 0-16777215 * (300)
daycvpsts48c	Day CV-P and CV-PFE bin for STS-48c. Range: 0-2147483647 ** (3000)

Table 3-283. RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 4 of 6)

Parameter Name	Description
qhespsts1	15-minute ES-P and ES-PFE bin for STS-1. Range: 0-900 (12)
dayespsts1	Day ES-P and ES-PFE bin for STS-1. Range: 0-86400 (100)
qhespsts3c	15-minute ES-P and ES-PFE bin for STS-3c. Range: 0-900 (20)
dayespsts3c	Day ES-P and ES-PFE bin for STS-3c. Range: 0-86400 (200)
qhespsts12c	15-minute ES-P and ES-PFE bin for STS-12c. Range: 0-900 (60)
dayespsts12c	Day ES-P and ES-PFE bin for STS-12c. Range: 0-86400 (600)
qhespsts48c	15-minute ES-P and ES-PFE bin for STS-48c. Range: 0-900 (240)
dayespsts48c	Day ES-P and ES-PFE bin for STS-48c. Range: 0-86400 (2400)
qhsesp	15-minute SES-P and SES-PFE bin. Range: 0-810 (3)
daysesp	Day SES-P and SES-PFE bin. Range: 0-77760 (7)
qhuasp	15-minute UAS-P and UAS-PFE bin. Range: 0-900 (10)
dayuasp	Day UAS-P and UAS-PFE bin. Range: 0-86400 (10)
qhppjcgen	15-minute PPJC-PGen bin. Range: 0-32767 (30)
dayppjcgen	Day PPJC-PGen bin. Range: 0-2097151 (2880)
qhnpjcgen	15-minute NPJC-PGen bin. Range: 0-32767 (30)
daynpjcgen	Day NPJC-PGen bin. Range: 0-2097151 (2880)
qhppjcdet	15-minute PPJC-PDet bin. Range: 0-32767 (30)

Table 3-283. RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 5 of 6)

Parameter Name	Description
dayppjcdet	Day PPJC-PDet bin. Range: 0-2097151 (2880)
qhnpjcdet	15-minute NPJC-PDet bin. Range: 0-32767 (30)
daynpjcdet	Day NPJC-PDet bin. Range: 0-2097151 (2880)
	The following parameters belong to DS3 profile type:
qhcvl	15-minute CV-L bin. Range: 0-16383 (387)
daycvl	Day CV-L bin. Range: 0-1048575 (3865)
qhesl	15-minute ES-L bin. Range: 0-900 (25)
dayesl	Day ES-L bin. Range: 0-86400 (250)
qhsesl	15-minute SES-L bin. Range: 0-900 (4)
daysesl	Day SES-L bin. Range: 0-86400 (40)
qhcvp	15-minute CV-P and CV-PFE bin. Range: 0-16383 (382)
daycvp	Day CV-P and CV-PFE bin. Range: 0-1048575 (3820)
qhesp	15-minute ES-P and ES-PFE bin. Range: 0-900 (25)
dayesp	Day ES-P and ES-PFE bin. Range: 0-86400 (250)
qhesap	15-minute ESA-P and ESA-PFE bin. Range: 0-900 (25)
dayesap	Day ESA-P and ESA-PFE bin. Range: 0-86400 (250)
qhesbp	15-minute ESB-P and ESB-PFE bin. Range: 0-900 (25)
dayesbp	Day ESB-P and ESB-PFE bin. Range: 0-86400 (250)

Table 3-283. RTRV-TCA-PROF Output *spec_block* Parameters (Sheet 6 of 6)

Parameter Name	Description
qhsesp	15-minute SES-P and SES-PFE bin. Range: 0-810 (4)
daysesp	Day SES-P and SES-PFE bin. Range: 0-77760 (40)
qhsasp	15-minute SAS-P and SAS-PFE bin. Range: 0-900 (2)
daysasp	Day SAS-P and SAS-PFE bin. Range: 0-86400 (8)
qhuasp	15-minute UAS-P and UAS-PFE bin. Range: 0-900 (10)
dayuasp	Day UAS-P and UAS-PFE bin. Range: 0-86400 (10)
	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)

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-284. 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 3-284. RTRV-ULS Input Parameters (Sheet 2 of 2)

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 2. 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 3-285. RTRV-ULS Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 2. 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 3-286. RTRV-ULS *spec_block* Output Parameters (Sheet 1 of 2)

Parameter Name	Description
ip_ad	IP Address. This parameter is available starting in Release 5. 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 5. 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 5. 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 5. 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 5. 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 3-286. RTRV-ULS *spec_block* Output Parameters (Sheet 2 of 2)

Parameter Name	Description
telnet_port	This parameter is available starting in Release 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-287. 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 2. 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 3-287. 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 3.0, 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 3-288. RTRV-ULSDCC-L3 Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 3.0. 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 3-289. RTRV-ULSDCC-L3 *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
l3area	NSAP Area Identifier. This parameter is available starting in Release 2. 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 2. 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.
l3idp	Initial Domain Part. This parameter is available starting in Release 1.0. This portion of the NSAP address consists of the first 3 octets (6-digit hex) of the address. For SONET systems, this field is set to 39840F hex to indicate that U.S. ANSI is the registration authority responsible for the allocation and assignment of NSAP addresses.
l3isct	Intermediate System Configuration Timer. This parameter is available starting in Release 2. 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 6.0 this parameter is no longer supported to improve the connectivity robustness.

Table 3-289. RTRV-ULSDCC-L3 *spec_block* Output Parameters
(Sheet 2 of 3)

Parameter Name	Description
l3isisnl	This parameter is available starting in Release 5. 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
l3lc	CLNP Lifetime Control Parameter. This parameter is available starting in Release 3. 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 6.0 this parameter is no longer supported to improve the connectivity robustness.
l3lv2is	This parameter is available starting in Release 2. 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 5.0, the parameter *l3lv2is* is replaced by *l3isisnl*.
l3org	Organization Identifier. This parameter is available starting in Release 2. 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.
l3rd	NSAP Routing Domain. This parameter is available starting in Release 2. 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.

Table 3-289. RTRV-ULSDCC-L3 *spec_block* Output Parameters
(Sheet 3 of 3)

Parameter Name	Description
l3res	NSAP Reserved. This parameter is available starting in Release 2. 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 2. 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 2. 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:l3idp=39840F,l3dfi=80,l3org=000000,l3res=0000"
   "1-1-#-#-dccei-cp:l3rd=0000,l3area=0000,l3sys=08006A112345"
   "1-1-#-#-dccei-cp:l3sel=00,l3lv2is=disable,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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-290. 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 2. 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 3-290. 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 3.0, 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 3-291. 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 3-292. RTRV-ULSDCC-L4 *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
l4ajnsap	This parameter is available starting in Release 3. 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 6.0 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 2. 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 2. 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 3-292. RTRV-ULSDCC-L4 *spec_block* Output Parameters
(Sheet 2 of 3)

Parameter Name	Description
l4etclp	This parameter is available starting in Release 2. 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 5. This parameter is used to enable or disable TARP Origination Functions. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE. Starting in Release 6.0, the initial value is ENABLE.
l4etpf	This parameter is available starting in Release 2. 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 2. This parameter is used to enable or disable TARP Responder Functions. Values: ■ ENABLE ■ DISABLE. The initial value is ENABLE.

Table 3-292. RTRV-ULSDCC-L4 *spec_block* Output Parameters
(Sheet 3 of 3)

Parameter Name	Description
l4letm	TARP Loop Detection Buffer Entry Timer. This parameter is available starting in Release 2. 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	TARP Loop Detection Buffer Flush Timer. This parameter is available starting in Release 2. 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=ENABLE,l4etrf=ENABLE"
   "1-1-#-#-dccei-cp:l4ajnsap=39840F8000000000000000000008006A11212300"
   "1-1-#-#-dccei-cp:l4ajnsap=39840F8000000000000000000001998ABCD195600"
;
```

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: Retrieve User

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

Beginning with Release 4.0, 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 3-293. 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 3-294. RTRV-USER Output Parameters

Parameter Name	Description
uid	User ID whose security parameters are to be retrieved. This parameter is available starting in Release 3. Values: Refer to the **ACT-USER** command.
spec_block	See the following table for all *spec_block* parameters.

Table 3-295. RTRV-USER *spec_block* Output Parameters (Sheet 1 of 3)

Parameter Name	Description
initobs	Initialization Observability. This parameter is available starting in Release 4.0.1. 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 3-295. RTRV-USER *spec_block* Output Parameters (Sheet 2 of 3)

Parameter Name	Description
page	Password Aging Interval. This parameter is available starting in Release 4. 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 3. 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 3. 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 3. 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 3-295. 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-USER-SECU: Retrieve User Security

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

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

Beginning with Release 5.0, 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 3-296. 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 2. Values: See the **ACT-USER** command for a description of this parameter. If this parameter is omitted, all ***uid***s are retrieved.

Table 3-296. 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 3-297. 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 2. Values: Refer to the **ACT-USER** command.
spec_block	See the following table for all *spec_block* parameters.

Table 3-298. 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 4.0.1. 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 4.0.1. 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 4. 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 ■ OWN. Starting with Release 2.0, the value OWN is displayed if the *screen* parameter has none of the other *screen* values.

Table 3-298. 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 4. 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 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 3. 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 1 to 5. Starting with Release 2.0, the following values apply to upc. 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.
	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-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

ED-USER-SECU

ENT-USER-SECU

NAME

RTRV-VCG: Retrieve Virtual Concatenation Group

The **RTRV-VCG** command is available beginning in:

- WaveStar TDM 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-299. 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 5. 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

Starting in Release 1.0, 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 3-300. RTRV-VCG Output Parameters

Parameter Name	Description
aid	Access Identifier. This parameter is available starting in Release 5. Value: VCG AID. See the AID table in OSEG Appendix A.
aidtrib	Access Identifier. This parameter is available starting in Release 5. 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 5. Values: 0 to 512000 in steps of 125.
spec_block	See the following table for all *spec_block* parameters.

Table 3-301. RTRV-VCG *spec_block* Output Parameters

Parameter Name	Description
enetpn	Ethernet Alarm Severity Assignment Profile. This parameter is available starting in Release 5. Values: Alphanumeric string with a maximum of 24 characters. The first character must be a letter. The initial profile is named “Default”.
enettca	Ethernet TCA Profile. This parameter is available starting in Release 5. 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 6. Values: ■ ENABLE ■ DISABLE (initial value)
vcgrate	VCG Rate. This parameter is available starting in Release 5. Values: ■ STS1 ■ STS3C
vcgsz	VCG Size. This parameter is available starting in Release 5. 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 5. Values: ■ MON ■ NMON (initial value).
vpm	VCG PM Enable. This parameter is available starting in Release 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-302. 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 5. 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 3-302. `RTRV-VCGTRIB` Input Parameters (Sheet 2 of 2)

Parameter Name	Description
modifier	Modifier. Values: ■ **STS** ■ **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 3-303. `RTRV-VCGTRIB` Output Parameters

Parameter Name	Description
aid	VCG Tributary AID. This parameter is available starting in Release 5. See the AID table in OSEG Appendix A.
aidtype	AID Type. Values: ■ STS
spec_block	See the following tables for all *spec_block* parameters.

Table 3-304. `RTRV-VCGTRIB` *spec_block* Output Parameters

Parameter Name	Description
aseqno	Accepted Sequence Number. This parameter is available starting in Release 5. Value: ■ 1 to 21.
tseqno	Transmitted Sequence Number. This parameter is available starting in Release 5. Value: ■ 1 to 21.

Table 3-305. `RTRV-VCGTRIB-rr` *spec_block* Parameters (Sheet 1 of 6)

rr	Parameter Name	Description
STS	*brstintvl*	Bursty Interval (starting in Release 5). Measurement period for determining bursty errors. See *brstthr*. Values: ■ 2 to 10 (seconds). Initial value: 7. Note - This parameter is valid for ALL tribs of the VCG, as the provisioning of any trib is applied to all of the VCG's tribs.
STS	*brstthr*	Bursty error Threshold (starting in Release 5). Threshold value for bursty errors. Values (as a percentage): ■ 0 - 100 at increments of 5. Initial value: 30. Note - This parameter is valid for ALL tribs of the VCG, as the provisioning of any trib is applied to all of the VCG's tribs.

Table 3-305. `RTRV-VCGTRIB-rr` *spec_block* Parameters (Sheet 2 of 6)

rr	Parameter Name	Description
STS	*degthr*	Path BER threshold. This parameter is available starting in Release 5. Values (as exponents of 10): ■ -5 ■ -6 (initial value 10-6) ■ -7 ■ -8 ■ -9. Note - This parameter is valid for ALL tribs of the VCG, as the provisioning of any trib is applied to all of the VCG's tribs.
STS	*dexcthr*	Excessive Degrade Threshold. This parameter is available starting in Release 5. This is more severe than degthr, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value 10-3) ■ -4 ■ -5. Note - This parameter is valid for ALL tribs of the VCG, as the provisioning of any trib is applied to all of the VCG's tribs.
STS	*ppm*	Path PM Enable. This parameter is available starting in Release 5.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 5. 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).

Table 3-305. `RTRV-VCGTRIB-rr` *spec_block* Parameters (Sheet 3 of 6)

rr	Parameter Name	Description
STS	*ptffmcrs*	PTF FM Crossconnect Dependency. This parameter is available starting in Release 5. Values: ■ YES (initial value) ■ NO
STS	*ptpn*	Path Terminating Alarm Severity Assignment Profile. This parameter is available starting in Release 5. 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.
STS	*ptrcrfmt*	Starting in Release 5, 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 3-305. `RTRV-VCGTRIB-rr` *spec_block* Parameters (Sheet 4 of 6)

rr	Parameter Name	Description
STS	*ptrcwfmt*	Starting in 5, 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.
STS	*rsiglb*	Received Signal Label (starting in Release 5). 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 5. Values: ■ POISSON ■ BURST (initial value). Note - This parameter is valid for ALL tribs of the VCG, as the provisioning of any trib is applied to all of the VCG's tribs.
STS	*tmonmd*	Tributary Monitoring Mode. This parameter is available starting in Release 5. 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 3-305. `RTRV-VCGTRIB-rr` *spec_block* Parameters (Sheet 5 of 6)

rr	Parameter Name	Description
STS	*trc*	Outgoing Path Trace. This parameter is available starting in Release 5. 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 5). 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.
STS	*inmbst*	Input Member Status (source) Starting in Release 6.1.5 the parameter 'inmbst' reports the status of the tributary related to its VCG membership in input direction. Value(s): ■ NA — Not Applicable, i.e. the trib. is no member of the VCG ■ ADD — the tributary is in the LCAS state "Wait-for-Add", "Add" or"Wait-for-ACK" ■ ACTIVE — the tributary is member of the VCG and working ■ FAILED — the tributary is member of the VCG but taken off by LCAS (incoming failed condition for the sink tributary) ■ UNAVAILABLE — for not available, i.e. the trib. is member of the VCG but the current data is not retrievable for any reason The state FAILED can only be reported if *lcasmd* is set to ENABLE for the VCG owning this tributary.

Table 3-305. `RTRV-VCGTRIB-rr` *spec_block* Parameters (Sheet 6 of 6)

rr	Parameter Name	Description
STS	*outmbst*	Output Member Status (sink) Starting in Release 6.1.5 the parameter *outmbst* reports the status of the tributary related to its VCG membership in output direction. Values: ■ NA — for not applicable, i.e. the trib. is not member of the VCG ■ ADD — the tributary is in the LCAS state "Wait-for-Add" or "Wait-for-Data" ■ ACTIVE — the tributary is member of the VCG and working ■ FAILED — the tributary is member of the VCG but not working due to a failure condition. Includes period during "Hold-Off". ■ WTR — failure condition has cleared, tributary is in wait to restore condition. ■ UNAVAILABLE — for not available, i.e. the current member status is not retrievable for any reason

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,STS::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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-306. 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 5. 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 5. 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 3-307. RTRV-VLAN Output Parameters

Parameter Name	Description
epaid	Ethernet Port AID. This parameter is available starting in Release 5. Values: Ethernet port AID. See the AID table in OSEG Appendix A.
vcgaid	VCG AID. This parameter is available starting in Release 5. Values: VCG AID. See the AID table in OSEG Appendix A.
vlanid	VLAN Identifier. This parameter is available starting in Release 5. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

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 3-308. 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 3-308. `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 3-309. `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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-310. 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).

The system comes "up" with the "Default" settings (initial value) ***durmode***=**MNTRY** and ***initcstat***=**RLS**.

These two parameters are NVM-attributes only i.e. they only serve as "memory-assist" to remember the control-mode of the externally connected "device"

(retrieve via **RTRV-ATTR-CONT**). On system/pack-init this information is used for the initialization of device=off, and of course also for the execution of the messages **OPR/RLS/RTRV-EXT-CONT**. The following is a description of how to change ***initcstat*** in a "live" system, and also to make it effective on the MDO. The default NVM-attributes can be modified through the CIT (uses TL1=**SET-ATTR-CONT**); the CIT uses this data and adjusts the configuration of the "buttons". However, the MDO-hardware does (and shall) not follow ***initcstat***.

When studying a new externally connected device, it may appear that ***initcstat*** has to be inverted; it means that the current "off" state of the MDO-hardware is wrong. The following procedure first adjusts (if necessary) the hardware (MDO make/break contact), and then adjusts the NVM-database (MDO attributes). Changing parameter ***durmode*** has no direct impact: it is simply used for the execution of the subsequent OPR/RLS-commands.

Procedure to invert ***initcstat*** :

```
IF> ( want to change initcstat (OPER/RLS)? )
  <THEN>
     <IF> durmode == CONTS
        <THEN>
           <IF> "Control Status" (CIT) == OFF
              <THEN>
                  press GUI-button "Conts/On"
              <ELSE>
                  { MDO is "On" already (device active)}
           <FI>
           { "Control Status" is ON }
        <ELSE>
           { durmode is MNTRY; "Control Status" is OFF }
             set durmode = CONTS and
             press GUI-button "Conts/On" to activate the MDO }
     <FI>
     { durmode is CONTS; MDO is "On"
       change initcstat (OPER/RLS); and
       change or restore durmode as desired }
FI>
 "Control Status" is OFF;
 initcstat is now changed, with durmode set as
 desired and MDO-hardware matches NVM+CIT }
```

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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 5.0

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 3-311. 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 3-311. SET-ATTR-ENV Input Parameters (Sheet 2 of 2)

Parameter Name	Description
spec_block	See the following table for all ***spec_block*** parameters.

Table 3-312. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 5.0, 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.

Important:
After changing the TID and exiting maintenance condition, the NE will perform a reset which takes about 5 minutes. During this time period there is no NE response and the user is able to login to the NE only after the reboot is completed.

INPUT PARAMETERS

Table 3-313. SET-SID Input Parameters

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.
newsid	Target/Source Identification. This is the new name of the network element. This new name becomes the effective TID for commands issued when the NE has left the maintenance condition. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

Beginning with Release 5.0, 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 3-314. 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.

Table 3-314. SET-SYNCN Input Parameters for System Timing (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.
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 3-315. 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 4.0, 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 "**STU**" (Synchronised Tracability Unknown) will be transmitted from the optical interface.

Table 3-315. SET-SYNCN *spec_block* Input Parameters for System Timing (Sheet 2 of 2)

Parameter Name	Description
tcs1	This parameter defines the Cable 1 Timing Collection Source. It specifies shelf AIDs for line references for both line timing references and output references. Values: ■ **NO-CONNECTION** ■ shelf AID. This parameter is not used in asingle shelf system, but is used for a multi-shelf system. The settig of shelf AID to 1-2 refers to the high-speed shelf. Starting in Release 4.0, the use of this parameter is discontinued.
timing	Starting in Release 5, 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**.
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 3-316. SET-SYNCN *spec_block* Input Parameters for Assigned Timing Reference (Sheet 1 of 2)

Parameter Name	Description
ql_prov	QL Provisioned. Starting in Release 4.0, 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). ■ **PRS** ■ **STU** ■ **ST2** ■ **ST3** 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 **ESF**; it is **STU** if ***ext_if*** is equal to **SF.**
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 4.0) ■ **5** through **8** (starting in Release 5.0).

Table 3-316. SET-SYNCN *spec_block* Input Parameters for Assigned Timing Reference (Sheet 2 of 2)

Parameter Name	Description
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 2) ■ **LINE2** (starting in Release 2) ■ **LINE3** (starting in Release 5.0) ■ **LINE4** (starting in Release 5.0) ■ **LINE5** (starting in Release 5.0) ■ **LINE6** (starting in Release 5.0).
tref_aid	Timing reference assigned port AID. This parameter is the designated port AID of the ***syncref_prov*** parameter. For multi-shelf system, the port AID must agree with the shelf AID in ***tcs1***. 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 4.0) ■ port AID of **LINE3** (starting in Release 5.0) ■ port AID of **LINE4** (starting in Release 5.0) ■ port AID of **LINE5** (starting in Release 5.0) ■ port AID of **LINE6** (starting in Release 5.0).

Table 3-317. SET-SYNCN *spec_block* Input Parameters for Port Provisioning (Sheet 1 of 2)

Parameter Name	Description
ext_equ	Starting in Release 3, this parameter indicates the timing output equalization to adjust the timing reference output signal power. The following values are represented by percentage. Values: ■ **20** (initial value) ■ **40** ■ **60** ■ **80** ■ **100**.
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): ■ **ESF** (initial value). ■ **SF** (starting in Release 4.0). This requires a timing circuit pack of version S1:6 or higher
ext_of	This parameter indicates the EXTREF timing output format. Values: ■ **ESF** (initial value) ■ **SF**
extout_en	External timing output enabling/disabling. Starting in Release 1.0, this parameter specifies whether the first external timing output is enabled or disabled. Values: ■ **ENABLE** (initial value) ■ **DISABLE**.
extout_prov	Starting in Release 1.0, this parameter provides the external output timing source. Values: ■ **NO-CONNECTION** (initial value) ■ **LINE1** ■ **LINE2** (starting in Release 5.0).

Table 3-317. SET-SYNCN *spec_block* Input Parameters for Port Provisioning (Sheet 2 of 2)

Parameter Name	Description
	Starting in Release 5.0, '**NO_CONNECTION**' is not a valid value. If ***toutpaid*** is equal to **EXTTMG0_OUT**, then LINE1 is the intial value of ***extout_prov***; else, LINE2 is.
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**.
frcdus	Starting in Release 5, this parameter indicates the Sync Message Force DUS Enable. Values: ■ **DISABLE** (initial value) ■ **ENABLE**.
qlout_tais	Acceptance QL for Output Threshold AIS. Starting in Release 5.0, 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: ■ **PRS** ■ **STU** ■ **ST2** ■ **ST3** (initial value).
tinpaid	Starting in Release 2, this parameter is for external timing input port AID. Values: ■ **EXTTMG0** ■ **EXTTMG1**.
toutpaid	Starting in Release 1.0, this parameter is for external timing output port AID. Values: ■ **EXTTMG0_OUT** ■ **EXTTMG1_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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

Beginning with Release 5.0, 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 3-318. 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 2.5G (OC-48)/10G (OC-192) (2-Fiber), Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M2

Beginning with Release 5.0, 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 3-319. 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 TL1 parameter tables

Overview

Purpose This appendix contains the following types of WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) parameters used by the TL1 commands/messages:

- External user access identifiers (AIDs) specified as input parameters
- SONET and DS3 performance monitoring (PM) parameters
- SONET alarms/events condition description parameters
- Password character parameters

Access identifier (AID) overview

Introduction

This appendix specifies the AID (access identifier) parameter details for the WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) TL1 commands/messages.

Several of the TL1 commands/messages allow a range of entities to be specified as input parameters in the TL1 command syntax. These entities are specified in the AID definitions shown in the tables of Appendix A. This appendix addresses only those entities (for example, packs, ports, protection groups) that are visible to users.

AID hierarchical order

The following assumed hierarchy exists for AID entities:

- Bay
- Shelf
- Protection group
- Side/line
- Slot
- Circuit Pack (CP)/Port
- Tributary

Important! Some AID entities such as: system, dsx_left, and dsx_right are not represented by this hierarchy and are handled separately.

AID general format

The general format/structure for an AID, which consists of the following seven fields separated by "-", is:

```
BAY-SHELF-PROTGRP-SIDE/LINE-SLOT-CP/ PORT-TRIB
```

The number (#) character

The number (#) character can be used as a placeholder in an AID field to represent a null value. Using one or more #(s) in a TL1 input command causes the AID fields (with #s) to be filled in appropriately in the TL1 output message (with the exception of slots and circuit packs).

Exceptions:

1. For slot and circuit pack input and output AIDs:
   "#-#" must be used in the protection group - side/line fields.
2. For port and tributary AIDs:
   when there is an unprotected optical port, "u-#" will be returned in the protection group - side/line fields of the AID.
3. For an electrical port or tributary (such as a DS3, EC1, or STM1EE4):
   "u-#" will be returned in the protection group - side/line fields of the AID (for both protected and unprotected).

Using the AID field value, "all"

The AID definitions allow the use of the term **all** in one or more AID fields within a compound AID definition.

Table A-1 Using the AID value "all"

The AID value "all" ...	
can be used to identify the following AID entities:	**can NOT be used to identify the following AID entities:**
Bay	Side/Line
Shelf	
Protection Group	
Slot	
Port	
Tributary	

However, if the AID value, **all** is used in:

- Bay and/or Shelf AID fields, then **all** cannot be specified in any other AID field.
- Protection Group/Slot, Port, and/or Tributary AID fields, then **all** cannot be specified in the Bay and/or Shelf AID fields.

An exception is the TL1 command, **RTRV-PM**, which allows the compound AIDs definition: all-all-#-#-all-all-all.

Global notes on the external user AID appendix tables

Note 1: OC-48 slots are identified by the EVEN slot, not the ODD slot. OC-48 circuit packs are double-width, thereby occupying two adjacent (odd/even pair) slots. The circuit pack is provisioned using the EVEN slot number. Alarms are also reported on the EVEN slot number. Therefore, the AIDs referring to the OC-48 port unit always indicate the EVEN slot number.

Note 2: All protection group numbers are two-character representations. All slot numbers can either be a one- or two-character representation; the Appendix A External User AID tables show two-character slot number representations. For example, slot 1 is identified as “01”.

Note 3: The Input AID column refers to AIDs that are input via the user and/or user interface. The Output AID column refers to AIDs that are sent from the NE (network element).

Character limit for AIDs

Table A-2 lists by field, the maximum number of characters allowed in the specific AID fields. In regard to whether or not leading zeros are permitted, the key factor is that when the field is filled in with a numeric value, the maximum number of characters in that field may not be exceeded.

For example, the values “192”, “99”, and “099” are all acceptable tributary values on an OC-192 tributary. However, the value “0192” would not be permitted because it exceeds the three-character maximum limit. In regard to acceptable values for the Bay field, the NE accepts bay values from 1 to 99 (one- or two-digit numbers).

Table A-2 Character limits by AID fields

AID FIeld	Maximum number of characters within a given field
Bay	If numeric, 2 characters maximum. Else exact bay name or “all” must be used.
Shelf	If numeric, 1 character maximum. Else, “all” can be used.
Protection Group	If a facility protection group, 3 characters maximum. Else if equipment, the exact protection group name must be used. Else, “all” can be used.
Side/Line	2 characters generally. Can be 3 characters in some instances.
Slot	If numeric, 2 characters maximum. Else, exact slot name or “all” must be used.
Port/Circuit Pack	If numeric, 1 character maximum. Else if circuit pack, 2 characters. Else, “all” can be used.
Tributary	If numeric, 3 characters maximum. Else, “all” can be used.

2-Fiber AID parameter tables

Introduction The following tables specify the WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) AID details for the TL1 commands/messages.

System AIDs

Table A-3 External user AIDs for the system

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G System	system	system
WaveStar® 2F 2.5G/10G System Switch Group	esysswitchgrp	esysswitchgrp

Bay AIDs

Table A-4 External user AIDs for the bays

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G Bay with 2.5G System Controller Shelf	1 all	1
WaveStar® 2F 2.5G/10G	{1-99} all	{1-99}

Shelf AIDS

Table A-5 Shelf external user AIDs

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 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® 2F 2.5G/10G 2.5G System Controller Shelf	1-1 1-all	1-1
WaveStar® 2F 2.5G/10G Any Shelf or All Shelves in a Specfic Bay	{1-99}-{1-3, all}	{1-99}-{1-3}

Protection group AIDs

Table A-6 External user AIDs for protection groups

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G All protection groups on the specified shelf	{1-99}-{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® 2F 2.5G/10G 2F BLSR Facility Protection Group	{1-99}-{1-3}-t{01-99, all}	{1-99}-{1-3}-t{01-99}
WaveStar® 2F 2.5G/10G 1+1 Facility Protection Group	{1-99}-{1-3}-o{01-99, all}	{1-99}-{1-3}-o{01-99}
WaveStar® 2F 2.5G/10G 1xN Equipment Protection Group (DS3/EC1)	{1-99}-{1-3}-eds3ec1grp	{1-99}-{1-3}-eds3ec1grp
WaveStar® 2F 2.5G/10G 1+1 Switch Equipment Protection Group	{1-99}-{1-3}-eswitchgrp	{1-99}-{1-3}-eswitchgrp
WaveStar® 2F 2.5G/10G 1+1 Timing Equipment Protection Group	{1-99}-{1-3}-etmggrp	{1-99}-{1-3}-etmggrp
WaveStar® 2F 2.5G/10G 1+1 DCC Equipment Protection Group (DCC and DCCEI)	{1-99}-{1-3}-edccgrp	{1-99}-{1-3}-edccgrp

Sides/Lines AIDs

These notes apply to the following table:
Note 1: {e,w} denotes the East side or West side.
Note 2: {w,p} denotes the Working side or the Protection side.

Table A-7 External user AIDs for sides/lines

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 2F BLSR Facility Protection Group East/West Side	{1-99}-{1-3}-t{01-99}-{e,w}	{1-99}-{1-3}-t{01-99}-{e,w}
WaveStar® 2F 2.5G/10G Optical 1+1 Protection Group Working/Protection Line	{1-99}-{1-3}-o{01-99}-{w,p}	{1-99}-{1-3}-o{01-99}-{w,p}

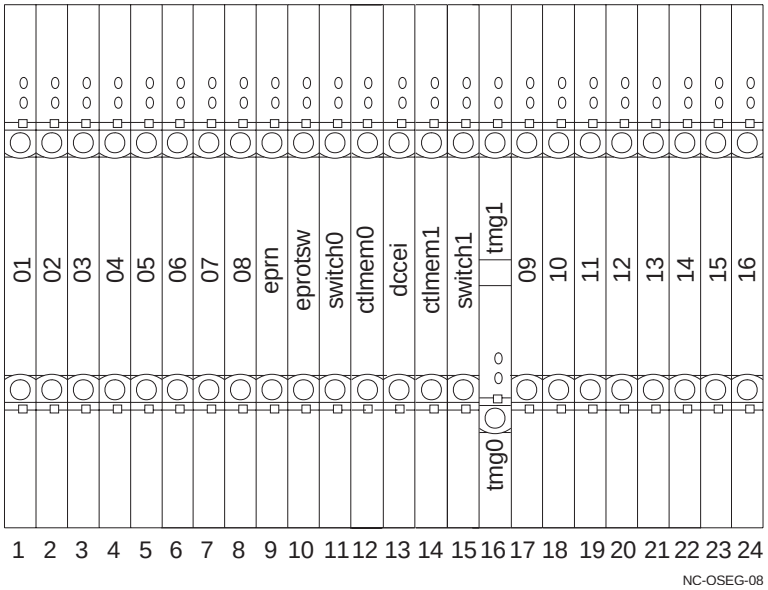
Table A-7 External user AIDs for sides/lines (Contd)

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 1xN Equipment Protection Group (DS3/EC1) Working/Protection Line	{1-99}-{1-3}-eds3ec1grp-{w,p}	{1-99}-{1-3}-eds3ec1grp-{w,p}
WaveStar® 2F 2.5G/10G 1+1 Timing Equipment Protection Group Working/Protection Line	{1-99}-{1-3}-etmggrp-{w,p}	{1-99}-{1-3}-etmggrp-{w,p}
WaveStar® 2F 2.5G/10G 1+1 DCC Equipment Protection Group (DCC and DCCEI) Working/Protection Line	{1-99}-{1-3}-edccgrp-{w,p}	{1-99}-{1-3}-edccgrp-{w,p}

2.5G (OC-48) Shelf slot names

Figure A-1 shows the slot names in the WaveStar® TDM 2.5G (OC-48) Shelf. See Table A-8 for more information.

Figure A-1 Slot names in the WaveStar® TDM 2.5G (OC-48) Shelf



2.5G (OC-48) Shelf slot AIDs

Table A-8 External user AIDs for slots in the WaveStar® TDM 2.5G (OC-48) shelf

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G Any Shelf All slots on the specified shelf	{1-99}-{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® 2F 2.5G/10G 2.5G Shelf Port card slot	{1-99}-{1-3}-#-#-{01-16}	{1-99}-{1-3}-#-#-{01-16}
WaveStar® 2F 2.5G/10G 2.5G Shelf DS3/EC1 slot	{1-99}-{1-3}-#-#-{01-06, 11-16}	{1-99}-{1-3}-#-#-{01-06, 11-16}
WaveStar® 2F 2.5G/10G 2.5G Shelf OC3 slot	{1-99}-{1-3}-#-#-{01-16}	{1-99}-{1-3}-#-#-{01-16}
WaveStar® 2F 2.5G/10G 2.5G Shelf OC12 slot	{1-99}-{1-3}-#-#-{01-16}	{1-99}-{1-3}-#-#-{01-16}
WaveStar® 2F 2.5G/10G 2.5G Shelf OC48 slot	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}
WaveStar® 2F 2.5G/10G 2.5G Shelf Gigabit Ethernet slot	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}
WaveStar® 2F 2.5G/10G 2.5G Shelf electrical protection pack slot	{1-99}-{1-3}-#-#-eprn	{1-99}-{1-3}-#-#-eprn
WaveStar® 2F 2.5G/10G 2.5G Shelf electrical protection switch pack slot	{1-99}-{1-3}-#-#-eprotsw	{1-99}-{1-3}-#-#-eprotsw
WaveStar® 2F 2.5G/10G 2.5G Shelf (576) switch0 slot	{1-99}-{1-3}-#-#-switch0	{1-99}-{1-3}-#-#-switch0

Table A-8 External user AIDs for slots in the WaveStar® TDM 2.5G (OC-48) shelf (Contd)

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 2.5G Shelf ctlmem0 slot (slot for subrack controller)	{1-99}-{1-3}-#-#-ctlmem0	{1-99}-{1-3}-#-#-ctlmem0
WaveStar® 2F 2.5G/10G 2.5G Shelf dccei slot	{1-99}-{1-3}-#-#-dccei	{1-99}-{1-3}-#-#-dccei
WaveStar® 2F 2.5G/10G 2.5G Shelf ctlmem1 slot (slot for subrack controller)	{1-99}-{1-3}-#-#-ctlmem1	{1-99}-{1-3}-#-#-ctlmem1
WaveStar® 2F 2.5G/10G 2.5G Shelf (576) switch1 slot	{1-99}-{1-3}-#-#-switch1	{1-99}-{1-3}-#-#-switch1
WaveStar® 2F 2.5G/10G 2.5G Shelf tmg0 slot	{1-99}-{1-3}-#-#-tmg0	{1-99}-{1-3}-#-#-tmg0
WaveStar® 2F 2.5G/10G 2.5G Shelf tmg1 slot	{1-99}-{1-3}-#-#-tmg1	{1-99}-{1-3}-#-#-tmg1

2.5G (OC-48) Shelf circuit pack AIDs

Table A-9 External user AIDs for circuit packs in the WaveStar® TDM 2.5G (OC-48) shelf

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G Shelf All of the circuit packs on a specified shelf	{1-99}-{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® 2F 2.5G/10G 2.5G Shelf Port unit	{1-99}-{1-3}-#-#-{01-16}-cp	{1-99}-{1-3}-#-#-{01-16}-cp
WaveStar® 2F 2.5G/10G 2.5G Shelf Electrical Protection unit	{1-99}-{1-3}-#-#-eprn-cp	{1-99}-{1-3}-#-#-eprn-cp

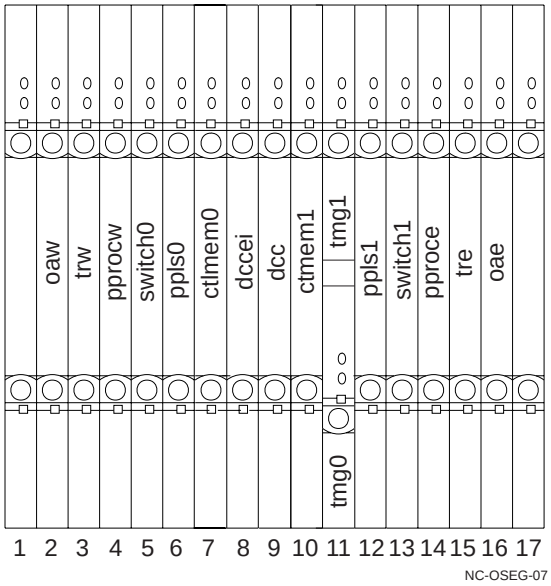
Table A-9 External user AIDs for circuit packs in the WaveStar® TDM 2.5G (OC-48) shelf

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 2.5G Shelf Electrical Protection Switch unit	{1-99}-{1-3}-#-#-eprotsw-cp	{1-99}-{1-3}-#-#-eprotsw-cp
WaveStar® 2F 2.5G/10G 2.5G Shelf (576) switch0 unit	{1-99}-{1-3}-#-#-switch0-cp	{1-99}-{1-3}-#-#-switch0-cp
WaveStar® 2F 2.5G/10G 2.5G Shelf ctlmem0 unit (SYS50DM)	{1-99}-{1-3}-#-#-ctlmem0-cp	{1-99}-{1-3}-#-#-ctlmem0-cp
WaveStar® 2F 2.5G/10G 2.5G Shelf dccei unit	{1-99}-{1-3}-#-#-dccei-cp	{1-99}-{1-3}-#-#-dccei-cp
WaveStar® 2F 2.5G/10G 2.5G Shelf ctlmem1 unit (SYS50DM1)	{1-99}-{1-3}-#-#-ctlmem1-cp	{1-99}-{1-3}-#-#-ctlmem1-cp
WaveStar® 2F 2.5G/10G) 2.5G Shelf (576) switch1 unit	{1-99}-{1-3}-#-#-switch1-cp	{1-99}-{1-3}-#-#-switch1-cp
WaveStar® 2F 2.5G/10G) 2.5G Shelf tmg0 unit	{1-99}-{1-3}-#-#-tmg0-cp	{1-99}-{1-3}-#-#-tmg0-cp
WaveStar® 2F 2.5G/10G) 2.5G Shelf tmg1 unit	{1-99}-{1-3}-#-#-tmg1-cp	{1-99}-{1-3}-#-#-tmg1-cp

10G (OC-192) Shelf slot names

Figure A-2 shows the slot names in the WaveStar® TDM 10G (OC-192) Shelf. See Table A-10 for more information.

Figure A-2 Slot names in the WaveStar® TDM 10G (OC-192) shelf



10G (OC-192) shelf slot AIDs

Table A-10 External user AIDs for slots in the WaveStar® TDM 10G (OC-192) shelf

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G) 10G Shelf oaw slot	{1-99}-{1-3}-#-#-oaw	{1-99}-{1-3}-#-#-oaw
WaveStar® 2F 2.5G/10G) 10G Shelf trw slot	{1-99}-{1-3}-#-#-trw	{1-99}-{1-3}-#-#-trw
WaveStar® 2F 2.5G/10G) 10G Shelf pprocw slot	{1-99}-{1-3}-#-#-pprocw	{1-99}-{1-3}-#-#-pprocw
WaveStar® 2F 2.5G/10G) 10G Shelf switch0 slot	{1-99}-{1-3}-#-#-switch0	{1-99}-{1-3}-#-#-switch0
WaveStar® 2F 2.5G/10G) 10G Shelf ppls0 slot	{1-99}-{1-3}-#-#-ppls0	{1-99}-{1-3}-#-#-ppls0

Table A-10 External user AIDs for slots in the WaveStar® TDM 10G (OC-192) shelf (Contd)

WaveStar® 2F 2.5G/10G) 10G Shelf ctlmem0 slot	{1-99}-{1-3}-#-#-ctlmem0	{1-99}-{1-3}-#-#-ctlmem0
WaveStar® 2F 2.5G/10G) 10G Shelf dccei slot	{1-99}-{1-3}-#-#-dccei	{1-99}-{1-3}-#-#-dccei
WaveStar® 2F 2.5G/10G) 10G Shelf dcc slot	{1-99}-{1-3}-#-#-dcc	{1-99}-{1-3}-#-#-dcc
WaveStar® 2F 2.5G/10G) 10G Shelf ctlmem1 slot	{1-99}-{1-3}-#-#-ctlmem1	{1-99}-{1-3}-#-#-ctlmem1
WaveStar® 2F 2.5G/10G) 10G Shelf tmg0 slot	{1-99}-{1-3}-#-#-tmg0	{1-99}-{1-3}-#-#-tmg0
WaveStar® 2F 2.5G/10G) 10G Shelf tmg1 slot	{1-99}-{1-3}-#-#-tmg1	{1-99}-{1-3}-#-#-tmg1
WaveStar® 2F 2.5G/10G) 10G Shelf ppls1 slot	{1-99}-{1-3}-#-#-ppls1	{1-99}-{1-3}-#-#-ppls1
WaveStar® 2F 2.5G/10G) 10G Shelf switch1 slot	{1-99}-{1-3}-#-#-switch1	{1-99}-{1-3}-#-#-switch1
WaveStar® 2F 2.5G/10G) 10G Shelf pproce slot	{1-99}-{1-3}-#-#-pproce	{1-99}-{1-3}-#-#-pproce
WaveStar® 2F 2.5G/10G) 10G Shelf tre slot	{1-99}-{1-3}-#-#-tre	{1-99}-{1-3}-#-#-tre
WaveStar® 2F 2.5G/10G) 10G Shelf oae slot	{1-99}-{1-3}-#-#-oae	{1-99}-{1-3}-#-#-oae

10G (OC-192) Shelf circuit pack AIDs

Table A-11 External user AIDs for circuit packs in the WaveStar® TDM 10G (OC-192) shelf

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 10G Shelf oaw unit	{1-99}-{1-3}-#-#-oaw-cp	{1-99}-{1-3}-#-#-oaw-cp
WaveStar® 2F 2.5G/10G 10G Shelf trw unit	{1-99}-{1-3}-#-#-trw-cp	{1-99}-{1-3}-#-#-trw-cp
WaveStar® 2F 2.5G/10G 10G Shelf pprocw unit	{1-99}-{1-3}-#-#-pprocw-cp	{1-99}-{1-3}-#-#-pprocw-cp
WaveStar® 2F 2.5G/10G 10G Shelf switch0 unit	{1-99}-{1-3}-#-#-switch0-cp	{1-99}-{1-3}-#-#-switch0-cp
WaveStar® 2F 2.5G/10G 10G Shelf ppls0 unit	{1-99}-{1-3}-#-#-ppls0-cp	{1-99}-{1-3}-#-#-ppls0-cp
WaveStar® 2F 2.5G/10G 10G Shelf ctlmem0 unit	{1-99}-{1-3}-#-#-ctlmem0-cp	{1-99}-{1-3}-#-#-ctlmem0-cp
WaveStar® 2F 2.5G/10G 10G Shelf dccei unit	{1-99}-{1-3}-#-#-dccei-cp	{1-99}-{1-3}-#-#-dccei-cp
WaveStar® 2F 2.5G/10G 10G Shelf dcc unit	{1-99}-{1-3}-#-#-dcc-cp	{1-99}-{1-3}-#-#-dcc-cp
WaveStar® 2F 2.5G/10G 10G Shelf ctlmem1 unit	{1-99}-{1-3}-#-#-ctlmem1-cp	{1-99}-{1-3}-#-#-ctlmem1-cp
WaveStar® 2F 2.5G/10G 10G Shelf tmg0 unit	{1-99}-{1-3}-#-#-tmg0-cp	{1-99}-{1-3}-#-#-tmg0-cp
WaveStar® 2F 2.5G/10G 10G Shelf tmg1 unit	{1-99}-{1-3}-#-#-tmg1-cp	{1-99}-{1-3}-#-#-tmg1-cp

Table A-11 External user AIDs for circuit packs in the WaveStar® TDM 10G (OC-192) shelf

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 10G Shelf ppls1 unit	{1-99}-{1-3}-#-#-ppls1-cp	{1-99}-{1-3}-#-#-ppls1-cp
WaveStar® 2F 2.5G/10G 10G Shelf switch1 unit	{1-99}-{1-3}-#-#-switch1-cp	{1-99}-{1-3}-#-#-switch1-cp
WaveStar® 2F 2.5G/10G 10G Shelf pproce unit	{1-99}-{1-3}-#-#-pproce-cp	{1-99}-{1-3}-#-#-pproce-cp
WaveStar® 2F 2.5G/10G 10G Shelf tre unit	{1-99}-{1-3}-#-#-tre-cp	{1-99}-{1-3}-#-#-tre-cp
WaveStar® 2F 2.5G/10G 10G Shelf oae unit	{1-99}-{1-3}-#-#-oae-cp	{1-99}-{1-3}-#-#-oae-cp

Port AIDs

Table A-12 External user AIDs for ports

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G All the ports on the shelf	{1-99}-{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® 2F 2.5G/10G All the unprotected ports on the shelf	{1-99}-{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® 2F 2.5G/10G All the protected and unprotected ports for the PM related TL1 commands ONLY.	{1-99,all}-{1-3,all}-{u,#}-#-all-all	This AID is specific to the Performance Monitoring TL1 commands.
WaveStar® 2F 2.5G/10G Generic DS3/EC1 port	{1-99}-{1-3}-#-#-{01-06, 11-16}-{1-8,all}	{1-99}-{1-3}-u-#-{01-06, 11-16}-{1-8}
WaveStar® 2F 2.5G/10G Generic OC3 port	{1-99}-{1-3}-#-#-{01-16}-{1-4,all}	{1-99}-{1-3}-#-#-{01-16}-{1-4} Note: #(s) will be filled in

Table A-12 External user AIDs for ports (Contd)

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G Generic OC3 port Starting Release 5.0	{1-99}-{1-3}-#-#-{01-16}-{1-8,all}	{1-99}-{1-3}-#-#-{01-16}-{1-8} Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic OC12 port	{1-99}-{1-3}-#-#-{01-16}-{1-2,all}	{1-99}-{1-3}-#-#-{01-16}-{1-2} Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic OC 48 port	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-1 Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic OC-192 port	{1-99}-{1-3}-#-#-{tre,trw}-{1,all}	{1-99}-{1-3}-#-#-{tre,trw}-1 Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic Gigabit Ethernet 2 port Ethernet port	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1-2,all}	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1-2} Note: #(s) will NOT be filled in
WaveStar® 2F 2.5G/10G Generic Gigabit Ethernet 2 port VCG Group	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2,all}	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2} Note: #(s) will NOT be filled in
WaveStar® 2F 2.5G/10G Electrical Protected or Unprotected Port	{1-99}-{1-3}-u-#-{01-06,11-16}-{1-8, all} {1-99}-{1-3}-#-#-{01-06,11-16}-{1-8, all}	{1-99}-{1-3}-u-#-{01-06,11-16}-{1-8}
WaveStar® 2F 2.5G/10G DS3/EC1 Unprotected 0x1 Port	{1-99}-{1-3}-u-#-{01-06, 11-16}-{1-8,all} {1-99}-{1-3}-#-#-{01-06, 11-16}-{1-8,all}	{1-99}-{1-3}-u-#-{01-06, 11-16}-{1-8}
WaveStar® 2F 2.5G/10G Optical OC-3 Unprotected 0x1 Port	{1-99}-{1-3}-u-#-{01-16}-{1-4, all} {1-99}-{1-3}-#-#-{01-16}-{1-4, all}	{1-99}-{1-3}-u-#-{01-16}-{1-4}
WaveStar® 2F 2.5G/10G Optical OC-3 Unprotected 0x1 Port Starting Release 5.0	{1-99}-{1-3}-u-#-{01-16}-{1-8, all} {1-99}-{1-3}-#-#-{01-16}-{1-8, all}	{1-99}-{1-3}-u-#-{01-16}-{1-8}

Table A-12 External user AIDs for ports (Contd)

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G Optical OC-12 Unprotected 0x1 Port	{1-99}-{1-3}-u-#-{01-16}-{1-2, all} {1-99}-{1-3}-#-#-{01-16}-{1-2, all}	{1-99}-{1-3}-u-#-{01-16}-{1-2}
WaveStar® 2F 2.5G/10G Optical OC-48 Unprotected 0x1 Port	{1-99}-{1-3}-u-#-{02, 04, 06, 08,...14, 16}-{1,all} {1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}	{1-99}-{1-3}-u-#-{02, 04, 06, 08,...14, 16}-1
WaveStar® 2F 2.5G/10G Optical OC-192 Unprotected 0x1 Port	{1-99}-{1-3}-u-#-{tre,trw}-{1,all} {1-99}-{1-3}-#-#-{tre,trw}-{1,all}	{1-99}-{1-3}-u-#-{tre,trw}-1
WaveStar® 2F 2.5G/10G 1+1 Port OC3/OC12/OC48 (Port in a 1+1 facility protection group)	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-4,all} {1-99}-{1-3}-o{01-99}-{w,p}-#-# {1-99}-{1-3}-#-#-{01-16}-{1-4,all} Note: “w” stands for Working, or “p” stands for Protection	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-4}
WaveStar® 2F 2.5G/10G 1+1 Port OC3/OC12/OC48 (Port in a 1+1 facility protection group) Starting Release 5.0	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8,all} {1-99}-{1-3}-o{01-99}-{w,p}-#-# {1-99}-{1-3}-#-#-{01-16}-{1-8,all} Note: “w” stands for Working, or“p” stands for Protection	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8}

Table A-12 External user AIDs for ports (Contd)

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 1+1 Port OC192 (Port in a 1+1 facility protection group)	{1-99}-{1-3}-o{01-99}-{w,p}-{tre,trw}-{1,all} {1-99}-{1-3}-o{01-99}-{w,p}-#-# {1-99}-{1-3}-#-#-{tre,trw}-{1,all} Note: “w” stands for Working, or“p” stands for Protection	{1-99}-{1-3}-o{01-99}-{w,p}-{tre,trw}-{1}
WaveStar® 2F 2.5G/10G OC-48 2 fiber BLSR port (Port in a 2 fiber BLSR facility protection group)	{1-99}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1,all} {1-99}-{1-3}-t{01-99}-{e,w}-#-# {1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all} Note: {e,w} stands for East or West.	{1-99}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1}
WaveStar® 2F 2.5G/10G OC-192 2 fiber BLSR port (Port in a 2 fiber BLSR facility protection group)	{1-99}-{1-3}-t{01-99}-{e,w}-{tre,trw}-{1,all} {1-99}-{1-3}-t{01-99}-{e,w}-#-# {1-99}-{1-3}-#-#-{tre,trw}-{1,all} Note: {e,w} stands for East or West.	{1-99}-{1-3}-t{01-99}-{e,w}-{tre,trw}-{1}

Tributary AIDs

Table A-13 External user AIDs for tributaries

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G All the tribs on all the ports on all the slots	{1-99}-{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® 2F 2.5G/10G All the tribs on all the unprotected ports on all the slots	{1-99}-{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® 2F 2.5G/10G All the protected and unprotected tributaries for PM related TL1 commands only.	{1-99}-{1-3,all}-{u,#}-#-all-all-all {1-99,all}-all-{u,#}-#-all-all-all	This AID is specific to the Performance Monitoring TL1 commands.
WaveStar® 2F 2.5G/10G Generic DS3/EC1 Tributary	{1-99}-{1-3}-#-#-{01-06, 11-16}-{1-8,all}-{1,all}	{1-99}-{1-3}-u-#-{01-06, 11-16}-{1-8}-1
WaveStar® 2F 2.5G/10G Generic OC-3 Tributary	{1-99}-{1-3}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-99}-{1-3}-#-#-{01-16}-{1-4}-{1-3} Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic OC-3 Tributary Starting Release 5.0	{1-99}-{1-3}-#-#-{01-16}-{1-8,all}-{1-3,all}	{1-99}-{1-3}-#-#-{01-16}-{1-8}-{1-3} Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic OC-12 Tributary	{1-99}-{1-3}-#-#-{01-16}-{1-2,all}-{1-12,all}	{1-99}-{1-3}-#-#-{01-16}-{1-2}-{1-12} Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic OC-48 Tributary	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-1-{1-48} Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G) Generic OC-192 Tributary	{1-99}-{1-3}-#-#-{tre,trw}-{1,all}-{1-192,all}	{1-99}-{1-3}-#-#-{tre,trw}-1-{1-192} Note: #(s) will be filled in
WaveStar® 2F 2.5G/10G Generic Gigabit Ethernet 2 port VCG Tributary	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2,all}-{1-24,all}	{1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-v{1-2}-{1-24} Note: #(s) will NOT be filled in

Table A-13 External user AIDs for tributaries (Contd)

WaveStar® 2F 2.5G/10G Electrical Protected or Unprotected Tributary	{1-99}-{1-3}-u-#-{01-06,11-16}-{1-8,all}-{1,all} {1-99}-{1-3}-#-#-{01-06,11-16}-{1-8,all}-{1,all}	{1-99}-{1-3}-u-#-{01-06,11-16}-{1-8}-{1}
WaveStar® 2F 2.5G/10G Optical (OC-3) Unprotected 0x1 Tributary	{1-99}-{1-3}-u-#-{01-16}-{1-4,all}-{1-3,all} {1-99}-{1-3}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-99}-{1-3}-u-#-{01-16}-{1-4}-{1-3}
WaveStar® 2F 2.5G/10G Optical (OC-3) Unprotected 0x1 Tributary Starting Release 5.0	{1-99}-{1-3}-u-#-{01-16}-{1-8,all}-{1-3,all} {1-99}-{1-3}-#-#-{01-16}-{1-8,all}-{1-3,all}	{1-99}-{1-3}-u-#-{01-16}-{1-8}-{1-3}
WaveStar® 2F 2.5G/10G Optical (OC-12) Unprotected 0x1 Tributary	{1-99}-{1-3}-u-#-{01-16}-{1-2,all}-{1-12,all} {1-99}-{1-3}-#-#-{01-16}-{1-2,all}-{1-12,all}	{1-99}-{1-3}-u-#-{01-16}-{1-2}-{1-12}
WaveStar® 2F 2.5G/10G Optical (OC-48) Unprotected 0x1 Tributary	{1-99}-{1-3}-u-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-99}-{1-3}-u-#-{02, 04, 06, 08,...14, 16}-1-{1-48}
WaveStar® 2F 2.5G/10G Optical (OC-192) Unprotected 0x1 Tributary	{1-99}-{1-3}-u-#-{tre,trw}-{1,all}-{1-192,all} {1-99}-{1-3}-#-#-{tre,trw}-{1,all}-{1-192,all}	{1-99}-{1-3}-u-#-{tre,trw}-{1}-{1-192}
WaveStar® 2F 2.5G/10G 1+1 optical tributary OC3/OC12/OC48	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-4,all}-{1-48,all} {1-99}-{1-3}-o{01-99}-{w,p}-#-#-{1-48,all} {1-99}-{1-3}-#-#-{01-16}-{1-4,all}-{1-48,all} Note: {w,p} stands for Working or Protection.	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-4}-{1-48}

Table A-13 External user AIDs for tributaries (Contd)

WaveStar® 2F 2.5G/10G 1+1 optical tributary OC3/OC12/OC48 Starting Release 5.0	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8,all}-{1-48,all} {1-99}-{1-3}-o{01-99}-{w,p}-#-#-{1-48,all} {1-99}-{1-3}-#-#-{01-16}-{1-8,all}-{1-48,all} Note: {w,p} stands for Working or Protection.	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8}-{1-48}
WaveStar® 2F 2.5G/10G) 1+1 optical tributary OC192	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8,all}-{1-48,all} {1-99}-{1-3}-o{01-99}-{w,p}-#-#-{1-48,all} {1-99}-{1-3}-#-#-{01-16}-{1-8,all}-{1-48,all} Note: {w,p} stands for Working or Protection.	{1-99}-{1-3}-o{01-99}-{w,p}-{01-16}-{1-8}-{1-48}
WaveStar® 2F 2.5G/10G OC-48 2F BLSR Tributary	{1-99}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-99}-{1-3}-t{01-99}-{e,w}-#-#-{1-48,all} {1-99}-{1-3}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} Note: {e,w} stands for East or West.	{1-99}-{1-3}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1}-{1-48}

Table A-13 External user AIDs for tributaries (Contd)

WaveStar® 2F 2.5G/10G OC-192 2F BLSR Tributary	{1-99}-{1-3}-t{01-99}-{e,w}-{tre,trw}-{1,all}-{1-192,all} {1-99}-{1-3}-t{01-99}-{e,w}-#-#-{1-192,all} {1-99}-{1-3}-#-#-{tre,trw}-{1,all}-{1-192,all} Note: {e,w} stands for East or West.	{1-99}-{1-3}-t{01-99}-{e,w}-{tre,trw}-{1}-{1-192}

Timeslot AIDs

Table A-14 External user AIDs for timeslots on NUT (non-preememtible protection access)

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 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)	{1-99}-{1-3}-t{01-99}-#-#-#-{1-96}

Fan AIDs

Table A-15 External user AIDs for fans

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 2.5G (OC-48) Shelf Fan	NA	{1-99}-{1-3}-fan1
WaveStar® 2F 2.5G/10G 10G (OC-192) Shelf Fan	NA	{1-99}-{1-3}-fan1

Alarm Points

Table A-16 External user AIDs for miscellaneous discrete alarm points

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G) Miscellaneous Discrete Alarm Points: Input	misc_in{1-16} misc_inall	misc_in{1-16}
WaveStar® 2F 2.5G/10G Miscellaneous Discrete Alarm Points: Output	misc_out{1-8} misc_outall	misc_out{1-8}

DSX AIDs

Table A-17 External user AIDs for DSXs left and right - I/O 2.5G (OC-48) shelf

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G 2.5G Shelf DS3 DSX Right (rear)	NA	{1-99}-{1-3}-dsx_left
WaveStar® 2F 2.5G/10G 2.5G Shelf DS3 DSX Left (rear)	NA	{1-99}-{1-3}-dsx_right
WaveStar® 2F 2.5G/10G 2.5G Shelf DS3 DSX Bottom (front)	NA	{1-99}-{1-3}-dsx_left
WaveStar® 2F 2.5G/10G 2.5G Shelf DS3 DSX Top (front)	NA	{1-99}-{1-3}-dsx_right
WaveStar® 2F 2.5G/10G 2.5G Shelf DS3 DSX Left (front)	NA	{1-99}-{1-3}-dsx_left
WaveStar® 2F 2.5G/10G 2.5G Shelf DS3 DSX Right (front)	NA	{1-99}-{1-3}-dsx_right

External timing reference AIDs

Table A-18 External user AIDs for WaveStar® TDM 10G (OC-192) external timing references

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G External Timing reference 1	extref1	extref1
WaveStar® 2F 2.5G/10G External Timing reference 2	extref2	extref2
WaveStar® 2F 2.5G/10G External Line Timing reference 1	line1	line1
WaveStar® 2F 2.5G/10G External Line Timing reference 2	line2	line2
WaveStar® 2F 2.5G/10G External Line Timing reference 3	line3	line3
WaveStar® 2F 2.5G/10G External Line Timing reference 4	line4	line4

Table A-18 External user AIDs for WaveStar® TDM 10G (OC-192) external timing references

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G External Line Timing reference 5	line5	line5
WaveStar® 2F 2.5G/10G External Line Timing reference 6	line6	line6

Incoming and outgoing timing port AIDs

Table A-19 External user AIDs for incoming and outgoing timing ports

Entity	Input AID	Output AID
WaveStar® 2F 2.5G/10G External Timing Input Port 0	exttmg0	exttmg0
WaveStar® 2F 2.5G/10G External Timing Input Port 1	exttmg1	exttmg1
WaveStar® 2F 2.5G/10G External Timing Output Port 0	exttmg0_out	exttmg0_out
WaveStar® 2F 2.5G/10G External Timing Output Port 1	exttmg1_out	exttmg1_out

2-Fiber PM parameter tables

Introduction The following tables list the WaveStar® TDM 2.5G (OC-48) / 10G (OC-192) (2-Fiber) SONET and DS3 PM parameters.

Table A-20 SONET section minimum register size

PM parameter	Rate (e.g., OC-N, EC1) N= 3, 12, 48, 192	Minimum size for accumulation registers		Minimum size for threshold registers	
		15 minute	1 day	15 minute	1 day
OPT	N = All	Not Defined	Not Defined	Not Defined	Not Defined
OPR	N = All	Not Defined	Not Defined	Not Defined	Not Defined
LBC	N = All	Not Defined	Not Defined	Not Defined	Not Defined
CV-S	N = 3 N = 12 N = 48 N = 192	16777215	2147483647	16777215	2147483647
ES-S	N = All	900	86400	900	86400
SES-S	N = All	900	86400	900	86400
SEFS-S	N = All	900	86400	900	86400
LOSS-S	N = All	900	86400	Not Defined	Not Defined
CV-L CV-LFE	EC1 N = 3 N = 12 N = 48 N = 192	16777215	2147483647	16777215	2147483647
ES-L ES-LFE	N = All , EC1	900	86400	900	86400
SES-L SES-LFE	N = All, EC1	900	86400	900	86400
UAS-L UAS-LFE	N = All , EC1	900	86400	900	86400
AISS-L	N = All, EC1	900	86400	Not Defined	Not Defined
FC-L FC-LFE	N = All, EC1	900	86400	Not Defined	Not Defined
PSC	N = All	63	255	Not Defined	Not Defined

Table A-20 SONET section minimum register size (Contd)

PM parameter	Rate (e.g., OC-N, EC1) N= 3, 12, 48, 192	Minimum size for accumulation registers		Minimum size for threshold registers	
		15 minute	1 day	15 minute	1 day
PSD	N = All	900	86400	Not Defined	Not Defined

Table A-21 SONET path minimum register size

PM parameter	Rate (e.g., STS-n) n = 1, 3c, 12c, 48c	Minimum size for accumulation registers		Minimum size for threshold registers	
		15 minute	1 day	15 minute	1 day
CV-P CV-PFE	n = 1 n = 3c	65535	8388607	65535	8388607
	n = 12c n = 48c	16777215	2147483647	16777215	2147483647
ES-P ES-PFE	n = All	900	86400	900	86400
SES-P SES-PFE	n = All	900	86400	900	86400
UAS-P UAS-PFE	n = All	900	86400	900	86400
FC-P FC-PFE	n = All	900	86400	Not Defined	Not Defined
PPJC-PGen NPJC-PGen PPJC-PDet NPJC-PDet	n = All	32767	2097151	32767	2097151

Table A-22 DS3 minimum register size

PM parameter	Minimum size for accumulation registers		Minimum size for threshold registers	
	15 minute	1 day	15 minute	1 day
DS3 CV-L	16383	1048575	16383	1048575
DS3 ES-L	900	86400	900	86400
DS3 SES-L	900	86400	900	86400
DS3 LOSS-L	900	86400	Not Defined	Not Defined
DS3 CV-P DS3 CV-PFE	16383	1048575	16383	1048575
DS3 ES-P DS3 ES-PFE	900	86400	900	86400
DS3 ESA-P DS3 ESA-PFE	900	86400	900	86400
DS3 ESB-P DS3 ESB-PFE	900	86400	900	86400
DS3 SES-P DS3 SES-PFE	810	77760	810	77760
DS3 SAS-P DS3 SAS-PFE	900	86400	900	86400
DS3 AISS-P	900	86400	Not Defined	Not Defined
DS3 UAS-P DS3 UAS-PFE	900	86400	900	86400
DS3 FC-P DS3 FC-PFE	900	86400	Not Defined	Not Defined

Table A-23 SONET section and line threshold register default values

PM parameter	Rate e.g. OC-N, EC1) N = 3, 12, 48, 192	Default value for threshold registers	
		15 minute	1 day
OPR	N = All	Not Defined	Not Defined
OPT	N = All	Not Defined	Not Defined
LBC	N = All	Not Defined	Not Defined
CV-S	N = All	Not Defined	Not Defined
ES-S	N = All	Not Defined	Not Defined
SES-S	N = All	Not Defined	Not Defined
SEFS-S	N = All, EC1	Not Defined	Not Defined
LOSS-S	N = All	Not Defined	Not Defined
CV-L CV-LFE	N =All, EC1	Not Defined	Not Defined
ES-L ES-LFE	N =All, EC1	Not Defined	Not Defined
SES-L SES-LFE	N =All, EC1	Not Defined	Not Defined
UAS-L UAS-LFE	N =All, EC1	Not Defined	Not Defined
FC-L FC-LFE	N =All, EC1	Not Defined	Not Defined
AISS-L	N =All, EC1	Not Defined	Not Defined
PSC	N = All	Not Defined	Not Defined
PSD	N = All	Not Defined	Not Defined

Table A-24 SONET path threshold register default values

PM parameter	Rate (e.g. STS-n) n = 1, 3c, 12c, 48c	Default value for threshold registers	
		15 minute	1 day
CV-P CV-PFE	n = 1 n = 3c n = 12c n = 48c	15 25 75 300	125 250 750 3000
ES-P ES-PFE	n = 1 n = 3c n = 12c n = 48c	12 20 60 240	100 200 600 2400
SES-P SES-PFE	n = All	3	7
UAS-P UAS-PFE	n = All	10	10
FC-P FC-PFE	n = All	Not Defined	Not Defined
PPJC-PGen NPJC-PGen PPJC-PDet NPJC-PDet	n = All	30	2880

Table A-25 DS3 threshold register default values

PM parameter	Default value for threshold registers	
	15 minute	1 day
DS3 CV-L	387	3865
DS3 ES-L	25	250
DS3 SES-L	4	40
DS3 LOSS-L	Not Defined	Not Defined
DS3 CV-P DS3 CV-PFE	382	3820
DS3 ES-P DS3 ES-PFE	25	250
DS3 ESA-P DS3 ESA-PFE	25	250
DS3 ESB-P DS3 ESB-PFE	25	250
DS3 SES-P DS3 SES-PFE	4	40
DS3 SAS-P DS3 SAS-PFE	2	8
DS3 AISS-P	Not Defined	Not Defined
DS3 UAS-P DS3 UAS-PFE	10	10
DS3 FC-P DS3 FC-PFE	Not Defined	Not Defined

Table A-26 SONET section SES definition

Rate	K
EC-1	52
OC-3	155
OC-12	616
OC-48	2392
OC-192	8554

SONET line SES definition

Rate	K
EC-1	51
OC-3	154
OC-12	615
OC-48	2459
OC-192	9835

Table A-27 SONET path SES definition

Rate	K
STS-1	2400
STS-3c	2400
STS-12c	2400
STS-48c	2400

Table A-28 DS3 SES definition

Minimum BER	Value of x
7.5×10^{-5}	2444
1×10^{-6} (Default)	44

Table A-29 DS3 interface and PM provisioning parameters

Framing	DS3 SF	PM mode	VMR mode	Monitor P-bits	Correct P-bits	Monitor C-bits
Framed	Framed or M23		VMR	X	X	
		pbit	VM	X		
			No VM (D)			
	C-Bit Parity		VMR		X	X
		cbit	VM			X
			No VM (D)			
Unframed	Clear-Channel	b3zs	Only no VM Allowed			

Important! (D): Default
CC: Clear Channel (which is different than framed (unchannelized))

Table A-30 SONET PM summary table

Interface	Level	Parameter	Interface type	
			Ec-1	OC-N
SONET	Physical	LBC	NA	*
		OPR	NA	*
		OPT	NA	*
	SONET section	CV-S	NA	X
		ES-S	NA	X
		SES-S	NA	X
		SEFS-S	X	X
		LOSS-S	NA	X
	SONET line	CV-L	X	X
		CV-LFE	X	X
		ES-L	X	X
		ES-LFE	X	X
		SES-L	X	X
		SES-LFE	X	X
		UAS-L	X	X
		UAS-LFE	X	X
		FC-L	X	X
		FC-LFE	X	X
		AISS-L	X	X
		PSC	NA	X
		PSD	NA	X
	SONET path	CV-P	X	X
		CV-PFE	X	X
		ES-P	X	X
		ES-PFE	X	X
		SES-P	X	X
		SES-PFE	X	X
		UAS-P	X	X
		UAS-PFE	X	X
		ALS-P	X	X
		ALS-PFE	X	X
		FC-P	X	X
		FC-PFE	X	X
		PPJC-PGen		
		NPJC-PGen	X	X
		PPJC-PDet		
		NPJC-PDet		

Table A-31 DS3 PM summary table

Interface	Level	Parameter	Signal format			
			Framed	M23	CBIT	B3ZS
DS3	Line	CV-L	X	X	X	X
		ES-L	X	X	X	X
		SES-L	X	X	X	X
		LOSS-L	X	X	X	X
	Path	CV-P	X	X	X	
		CV-PFE			X	
		ES-P	X	X	X	
		ES-PFE			X	
		ESA-P	X	X	X	
		ESA-PFE			X	
		ESB-P	X	X	X	
		ESB-PFE			X	
		SES-P	X	X	X	
		SES-PFE			X	
		SAS-P	X	X	X	
		SAS-PFE			X	
		AISS-P	X	X	X	
		UAS-P	X	X	X	
		UAS-PFE			X	
		FC-P	X	X	X	
		FC-PFE			X	

Table A-32 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-33 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

2-Fiber alarms/events tables with condition description parameters

Introduction

The alarms/events tables list the condition description parameters associated with the SONET alarms/events.The tables are organized according to Alarm Severity Assignment Profile (ASAP) profile types.

A column in each table lists the **ED-ASAP-PROF** command ASAP input parameters (or **RTRV-ASAP-PROF** command ASAP output parameters). These two TL1 commands can be used to modify the severity associated with a parameter. That severity determines if the parameter represents an alarm or event.

Global note for the alarms/ events tables

The alarms/events tables list parameters associated with the alarm and event TL1 commands (**RTRV-ALM**, **RTRV-COND**, **RTRV-FLT-STATE**, **REPT ALM**, **REPT COND**, and **REPT EVT**). The alarms/ events tables list the values for the *modifier*, *condtype*, and *conddescr* parameters that can be returned by these TL1 commands. Some of these commands also have the parameter, *aidtype* which can have the same set of parameter values as the parameter, *modifier*.

The tables are organized by 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.

Alarm level

Some of the ASAP parameters have Service Affecting (SA) and Non Service Affecting (NSA) values. For these cases there are table columns labeled SA alarm level and NSA alarm level. If there is no differentiation between SA and NSA conditions, then the column is labelled just alarm level. The column entries presents the default alarm levels (codes) for the different alarm conditions. Alarm levels include: CR (Critical), MJ (Major), MN (Minor), NA (Not-Alarmed), and NR (Not-Reported).

Type of AID and alarmed entity

Together, the two terms, Type of AID and the alarmed entity describe the entity that may be alarmed. For example, Type of AID might be “logical tributary” and alarmed entity might be “{rr} CS” where {rr} may represent the set of values STS1, STS3C, STS12C, STS48C and CS designates a Constituent Signal within the associated port. Each alarmed entity that appears in a table is **bolded**.

Table A-34 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: OC3, OC12, OC48, OC192			
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-35 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: OC48, OC192			
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

Table A-35 BLSR ASAP profile (Contd)

Alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
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
Properties of the following alarms/events Type of AID: protection group Alarm Duration: persistent			
modifier / aidtype: OC48, OC192			
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

Table A-35 BLSR ASAP profile (Contd)

Alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
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
MN	nut_nopr	NUTNOPR	Communications, **{rr} CS**, Local NUT Not Operational Communications, **{rr} CS**, Local NUT Not Operational-cleared
MJ	nut_inxcgrn	NUTINXCGRN	Communications, **{rr} CS**, NUT Inconsistent XC Granularity Communications, **{rr} CS**, NUT Inconsistent XC Granularity-cleared
MN	nut_dsbld	NUTDSBLD	Communications, **{rr} CS**, NUT Disabled Communications, **{rr} CS**, NUT Disabled-cleared
NR	nut_tmpprv	NUTTMPPRV	Communications, **{rr} CS**, Temporary NUT Provisioned Communications, **{rr} CS**, Temporary NUT Provisioned-cleared

Table A-36 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: STS1, STS3C, STS12C, STS48C			
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-37 DS3IN 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: T3				
CR	MN	sa_ds3los nsa_ds3los	LOS	Communications, **DS3 port**, DS3 Loss of Signal Communications, **DS3 port**, DS3 Loss of Signal-cleared
CR	MN	sa_ds3lof nsa_ds3lof	LOF	Communications, **DS3 port**, DS3 Loss of Frame Communications, **DS3 port**, DS3 Loss of Frame-cleared
NR	NR	sa_ds3ais nsa_ds3ais	AIS	Communications, **DS3 port**, Alarm Indication Signal - DS3 Communications, **DS3 port**, Alarm Indication Signal - DS3-cleared
MJ	MN	sa_ds3ber nsa_ds3ber	T-BERL (this is for thlev=6)	Communications, **DS3 port**, DS3 Bit Error Communications, **DS3 port**, DS3 Bit Error-cleared
NR	NR	sa_ds3idle nsa_ds3idle	ISD	Communications, **DS3 port**, DS3 Idle Signal Communications, **DS3 port**, DS3 Idle Signal-cleared
CR	MN	sa_cbitmm nsa_cbitmm	CBITMM	Communications, DS3 port, C-bit mismatch Communications, DS3 port, C-bit mismatch - cleared

Table A-38 DS3OUT ASAP profile

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: T3			
CR	ais	AIS-P	Communications, **DS3 port**, Alarm Indication Signal - Path Communications, **DS3 port**, Alarm Indication Signal - Path-cleared
CR	lop	LOP-P	Communications, **DS3 port**, Loss of Pointer Communications, **DS3 port**, Loss of Pointer-cleared

Table A-38 DS3OUT ASAP profile (Contd)

Alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
NR	rfi	RFI-P	Communications, **DS3 port**, Remote Failure Indication - Path Communications, **DS3 port**, Remote Failure Indication - Path-cleared
CR	uneq	UNEQ-P	Communications, **DS3 port**, STS Path Unequip Communications, **DS3 port**, STS Path Unequip-cleared
CR	plm	PLM-P	Communications, **DS3 port**, STS Payload Label Mismatch Communications, **DS3 port**, STS Payload Label Mismatch-cleared

Table A-39 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

Table A-39 ENET ASAP profile (Contd)

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
CR	NR	sa_lopc nsa_lopc	CLOPC	Communications, **VCG**, Loss of Partial Capacity Communications, **VCG**, Loss of Partial Capacity -cleared
CR	NR	sa_lotc nsa_lotc	CLOTC	Communications, **VCG**, Loss of Total Capacity Communications, **VCG**, Loss of Total Capacity -cleared
CR	NR	sa_fopr nsa_fopr	CFOPR	Communications, **VCG**, Failure of Protocol Rx Communications, **VCG**, Failure of Protocol Rx -cleared
CR	NR	sa_fopt nsa_fopt	CFOPT	Communications, **VCG**, Failure of Protocol Tx Communications, **VCG**, Failure of Protocol Tx -cleared

Table A-40 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-41 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				

Table A-41 EQPT ASAP profile (Contd)

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
CR CR	MN MN	sa_cpfail nsa_cpfail sa_cpuneq nsa_cpuneq	EQPT REPLUNIT MISS (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
-	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	REPLUNIT MISS	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

Table A-41 EQPT ASAP profile (Contd)

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
CR CR	MN MN	sa_cpfail nsa_cpfail sa_cpuneq nsa_cpuneq	EQPT REPLUNIT MISS (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
-	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	REPLUNIT MISS	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

Table A-41 EQPT ASAP profile (Contd)

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
-	MN	sa_cpunav nsa_cpunav	CPUNAV	Equipment, **Slot**, Circuit Pack Unavailable Equipment, **Slot**, Circuit Pack Unavailable-cleared
-	MN	sa_cbldgnf nsa_cbldgnf	CPUNAV	Equipment, **Slot**, Cable Diagnostics Failure Equipment, **Slot**, Cable Diagnostics Failure-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
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: circuit pack Alarm Duration: persistent modifier / aidtype: COM				

Table A-41 EQPT ASAP profile (Contd)

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
MJ	MN	sa_rsrcusg nsa_rsrcusg	PROCROVLD-1 (processor overload error 1)	Processing error, **{cpname}/{cpqual}**, Resource Usage, {resource type} Processing error, **{cpname}/{cpqual}**, Resource Usage, {resource type}-cleared
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-42 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
NR	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
NR	rfi	RFI-P	Communications, **STS1 CS**, Remote Failure Indication - Path Communications, **STS1 CS**, Remote Failure Indication - Path-cleared

Table A-42 PT ASAP profile (Contd)

Alarm level	ASAP parameter	condtype	conddescr The Alarm Issue Point (entity is **bolded**)
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-43 SONET 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 / rr: EC1, OC3, OC12, OC48, OC192				
CR	MN	sa_los nsa_los	LOS	Communications, **{rr} port**, Loss of Signal Communications, **{rr} port**, 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_lof nsa_lof	LOF	Communications, **{rr} port**, Loss of Frame Communications, **{rr} port**, Loss of Frame-cleared
NR	NR	sa_aisl nsa_aisl	AIS-L	Communications, **{rr} port**, Alarm Indication Signal - Line Communications, **{rr} port**, Alarm Indication Signal - Line-cleared
NR	NR	sa_rfil nsa_rfil	RFI-L	Communications, **{rr} port**, Remote Failure Indication Communications, **{rr} port**, Remote Failure Indication-cleared
CR	MN	sa_eber nsa_eber	T-BERL (thlev 3 to 5)	Communications, **{rr} port**, Excessive Error Communications, **{rr} port**, Excessive Error-cleared

Table A-43 SONET ASAP profile (Contd)

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
MJ	MN	sa_ber nsa_ber	T-BERL (thlev 5 to 9)	Communications, **{rr} port**, Bit Error/Signal Degrade Communications, **{rr} port**, Bit Error/Signal Degrade-cleared
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent				
modifier / aidtype / rr: OC3, OC12, OC48, OC192				
-	MN	sa_dccsect nsa_dccsect	EOC (embedded operations channel)	Communications, **{rr} port**, DCC Sect Failure Communications, **{rr} port**, DCC Sect Failure-cleared
-	MN	sa_dccline nsa_dccline	OSILINKER R	Communications, **{rr} port**, DCC Line Failure Communications, **{rr} port**, DCC Line Failure-cleared
-	MN	sa_lidsectmm nsa_lidsectmm	EOC (embedded operations channel)	Communications, **{rr} port**, LinkID Sect Mismatch Communications, **{rr} port**, LinkID Sect Mismatch-cleared
-	MN	sa_lidlinemm nsa_lidlinemm	OSILINKER R	Communications, **{rr} port**, LinkID Line Mismatch Communications, **{rr} port**, LinkID Line Mismatch-cleared
-	MN	sa_unssect nsa_unssect	EOC (embedded operations channel)	Communications, **{rr} port**, User-Network Side Sect Failure Communications, **{rr} port**, User-Network Side Sect Failure-cleared
-	MN	sa_unsline nsa_unsline	OSILINKER R	Communications, **{rr} port**, User-Network Side Line Failure Communications, **{rr} port**, User-Network Side Line Failure-cleared

Table A-44 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			
-	arst	AUTORESET	Processing error, **{cpname}/{cpqual}**, Autonomous Reset Note: issued just before a failed controller is reset due to a fatal software error.
-	swerr	SFT	Processing error, **{cpname}/{cpqual}**, Software Error, fatal
			Processing error, **{cpname}/{cpqual}**, Software Error, {message} Note: {message} represents a non-quoted string. Example: non fatal
-	omerr	WKGMEM	Processing error, **{cpname}/{cpqual}**, Out of Memory Error
-	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			
-	stqlc	SYNCSTATCHNG (sync status chg)	Communications, **System Timing**, System Timing Quality Level Chg
Properties of the following alarms/events Type of AID: logical tributary Alarm Duration: temporary modifier / aidtype: STS3, STS12, STS48			
-	csrc	MAN	Communications, **{rr} XC**, Constituent Signal Rate Change - where {rr} is STS3, STS12, STS48
Properties of the following alarms/events Type of AID: system Alarm Duration: temporary modifier / aidtype: EQPT			
-	adbf	DBMEMTRF	Equipment, **System**, Auto Database Backup Failure

Table A-44 SYS ASAP profile (Contd)

Alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
-	almtst	TSA	Equipment, **System**, Alarm Test
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent			
modifier / aidtype / rr: OC3, OC12, OC48, OC192			
-	dccsectdu	EOC (embedded operations channel)	Communications, **{rr} port**, DCC Sect Disabled-Unavailable Communications, **{rr} port,** DCC Sect Disabled-Unavailable-cleared
-	dcclinedu	OSILINKERR	Communications, **{rr} port**, DCC Line Disabled-Unavailable Communications, **{rr} port**, DCC Line Disabled-Unavailable-cleared
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent modifier / aidtype / rr: OC3, OC12, OC48, OC192			
-	dcctypm	EOC (embedded operations channel)	Communications, **{rr} port**, DCC Type Mismatch Communications, **{rr} port**, DCC Type Mismatch-cleared
Properties of the following alarms/events Type of AID: system Alarm Duration: persistent modifier COM			
CR	far_end_cr	FAREND	Far end critical alarm exists on RNES (FE led is lit)
MJ	far_end_mj	FAREND	Far end major alarm exists on RNES (FE led is lit)
MN	far_end_mn	FAREND	Far end minor alarm exists on RNES (FE led is lit)
MJ	agne	AGNE	Equipment, AGNE communication failure

Table A-45 TIMING ASAP profile

Alarmlevel	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
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-46 TRIBSONET ASAP profile

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
CR	MN	sa_lop nsa_lop	LOP-P	Communications, **{rr} CS**, Loss of Pointer Communications, **{rr} CS**, Loss of Pointer-cleared
NR	NR	sa_ais nsa_ais	AIS-P	Communications, **{rr} CS**, Alarm Indication Signal - Path Communications, **{rr} CS**, Alarm Indication Signal - Path-cleared
CR	MN	sa_uneq nsa_uneq	UNEQ-P	Communications, **{rr} CS**, STS Path Unequip Communications, **{rr} CS**, STS Path Unequip-cleared
NR	NR	sa_pdi nsa_pdi	PDI-P	Communications, **{rr} CS**, STS Payload Defect Indicator Communications, **{rr} CS**, STS Payload Defect Indicator-cleared

Table A-46 TRIBSONET ASAP profile (Contd)

SA alarm level	NSA alarm level	ASAP parameter	condtype	conddescr The alarmed entity is **bolded**
NR	NR	sa_eber nsa_eber	T-BERP (thlev 3 to 5)	Communications, **{rr} CS**, Excessive Error - Path Communications, **{rr} CS**, Excessive Error - Path-cleared
NR	NR	sa_ber nsa_ber	T-BERP (thlev 5 to 9)	Communications, **{rr} CS**, Bit Error/Signal Degrade - Path Communications, **{rr} CS**, Bit Error/Signal Degrade - Path-cleared
MJ	MN	sa_srm nsa_srm	SRM-P	Communications, **{rr} CS**, Signal Rate Mismatch - Path Communications, **{rr} CS**, Signal Rate Mismatch - Path-cleared

Alarms in the following tables cannot have their alarm level changed and do not belong to an ASAP profile.

Table A-47 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

Table A-47 Non provisionable alarms (Contd)

Alarm level	condtype	conddescr The alarmed entity is **bolded**
NA	SIAC	Equipment, **System**, System in ABN Condition Equipment, **System**, System in ABN Condition-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: COM		
NA	MAN	Security, **System**, Intruder Alert
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent		
modifier / aidtype I rr: OC48, OC192		
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: EC1, OC3, OC12, OC48, OC192		
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: EC1, OC3, OC12, OC48, OC192 modifier / aidtype / rr: STS1, STS3C, STS12C		
NA	T-{montype}	Quality of service, **{rr} CS**, Threshold Crossing Alert.
Properties of the following alarms/events Type of AID: port Alarm Duration: temporary modifier / aidtype: T3		

Table A-47 Non provisionable alarms (Contd)

Alarm level	condtype	conddescr The alarmed entity is **bolded**
NA	T-{montype}	Quality of service, **DS3 port** (incoming), Threshold Crossing Alert
		Quality of service, **DS3 port** (outgoing), Threshold Crossing Alert

Protection switching event parameter tables

Protection switching events

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).

Table A-48 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-49 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: OC3, OC12, OC48, OC192		
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-50 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:: OC3, OC12, OC48, OC192		
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

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-51 1+1 equipment protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: circuit pack modifier: COM		
forced	GP	Protection switch, EQPT, Forced switch
no request	GP	Protection switch, EQPT, No request

Starting in Release 5, **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 5, 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 5, the protection group AID is reported.

These changes are shown in the following table:

Table A-52 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, GP (Note 3)	Protection switch, EQPT, Forced switch
no request	GP	Protection switch, EQPT, No request
manual	PS, GP	Protection switch, EQPT, Manual switch
equip failed	Note 3	Protection switch, EQPT, EQF

Starting in Release 6.1.5, the parameters of the **REPT EVT** messages issued for switch fabric 1+1 equipment protection switch state changes will be as shown in following table:

Table A-53 EQPTSWFBR 1+1 equipment protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: protection group modifier: EQPT		
forced	GP, GP (Note 3)	Protection switch, EQPT, Forced switch
no request	GP	Protection switch, EQPT, No request

Table A-53 EQPTSWFBR 1+1 equipment protection type

Switch request state	condtype	conddescr / comment
manual	PS	Protection switch, EQPT, No request
equip failed	GP, PS (Note 3)	Protection switch, EQPT, EQF

Starting in Release 6.1.5, the parameters of the **REPT EVT** messages issued for timing 1+1 equipment protection switch state changes will be as shown in following table:

Table A-54 EQPTTIMG 1+1 equipment protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: protection group modifier: EQPT		
no request	GP	Protection switch, EQPT, No request
manual	PS,	Protection switch, EQPT, No Request
equip failed	GP,PS (Note 3)	Protection switch, EQPT, EQF

Table A-55 PATHDRI / CONSTITUENTPATH protection types

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: protection group modifier and rr: STS1, STS3C, STS12C, STS48C		
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.

Table A-55 PATHDRI / CONSTITUENTPATH protection types (Contd)

Switch request state	condtype	conddescr / comment
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-56 2F protection type

Switch request state	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr: OC48, OC192		
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-57 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-58 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-59 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
%	Percent sign	25
#	Number sign	23

Disallowed password characters

The following table lists the characters disallowed in a password.

Table A-60 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).

Index

A

Access identifier (AID), 3-14
AID, 3-14 A-2
AID format, A-2
AID hierarchical order, A-2
Alarm level, A-36
Alarms, A-36
all, A-3
Autonomous messages, 3-24

B

Bay AIDs, A-6

C

Circuit Pack AIDs, A-14
Circuit Packs
  Retrieve States, 3-531 3-793
CLNP network layer specifications, 2-22
Command code, 3-14
Command function categories, 3-5
Common block, 3-15
Correlation tag, 3-15
Cross-Connections
  Rolling, 3-57 3-335
CTAG, 3-15

D

Default parameter values, 3-16
Disabling DCCs, 2-18
DS1 Signal
  Rolling Cross-Connections, 3-57 3-335
DS3 Signal
  Rolling Cross-Connections, 3-57 3-335
DSX AIDs, A-23

E

EI-IS network layer specifications, 2-23
Enabling DCCs, 2-17
Enter Rollover STS1, 3-57 3-335
Enter Rollover T1, 3-57 3-335
Enter Rollover T3, 3-57 3-335
Enter Rollover VT1, 3-57 3-335
ENT-ROLL-STS1, 3-57 3-335
ENT-ROLL-T1, 3-57 3-335
ENT-ROLL-T3, 3-57 3-335
ENT-ROLL-VT1, 3-57 3-335
Equipment
  Retrieve States, 3-531 3-793
Events, A-36

F

Facilities
  Rolling Cross-Connections, 3-57 3-335
Fan AIDs, A-22

M

Message payload block(s), 3-15

N

NCC communications options, 2-1
Number (#) character, A-2

O

OSI network layer provisionable parameters, 2-25
OSI session layer specifications, 2-27
OSI stack, 2-11
OSI WAN/LAN communication, 2-3
OSI/LAN protocol stack, 2-12

P

Password characters, A-63

PM parameters, A-25

Port AIDs, A-15

Port Protection Group, 2-17

Protection Mode, 2-17

Protection Type, 2-17

Protocol stacks, 2-11

R

Retrieve State Equipment, 3-531 3-793

Rolling Cross-Connections, 3-57 3-335

RTRV-STATE-EQPT, 3-531 3-793

S

Signals

Rolling Cross-Connections, 3-57 3-335

Slot names, A-8 A-9 A-10 A-12

Spec block, 3-15

Staging parameter blocks, 3-14

State block, 3-16

States

Retrieve Equipment, 3-531 3-793

STS-1 Signal

Rolling Cross-Connections, 3-57 3-335

Syntax, 3-16

Brackets, 3-16

Colon, 3-16

Comma, 3-16

Semicolon, 3-16

System AIDs, A-6

T

Target identifier (TID), 3-14

TID, 3-14

TL1 command input, 3-13

TL1 commands

Autonomous response message, 3-24

Input acknowledgment, 3-17

Input format, 3-13

Output format, 3-19

TL1 interface, 1-2

TL1 syntax

Brackets, 3-16

Colon, 3-16

Commas, 3-16

Semicolon, 3-16

TP4 transport layer specifications, 2-26

Tributary AIDs, A-19

U

UID, 3-15

User authorization levels, 3-6

User ID, 3-15

V

VT1.5 Signal

Rolling Cross-Connections, 3-57 3-335

X

X.25 to OSI gateway, 2-4 2-5 2-7