

Lucent Technologies
Bell Labs Innovations



WaveStar™ BandWidth Manager **Release 3.1**

Operations Systems Engineering **Guide**

an InfoWare® Product

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Using the OSEG

Introduction

The Operations Systems Engineering Guide (OSEG) provides operations systems (OS) engineering information for the Transaction Language (TL1) commands used in WaveStar BandWidth Manager.

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
 - to set up OS management systems, communications interfaces, or directory services
-

(Continued on next page)

Using the OSEG, *continued*

Chapter Descriptions

Table 1 briefly describes the type of information found in each chapter.

Table 1. Chapter Descriptions

Chapter	Title	Description
Preface	About This Document	■ 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	provides information on the TL1 interface protocols: ■ X.25 ■ TCP/IP ■ RFC1006++ (Transport Service Bridge) ■ RS-232 ■ OSI
3	BWM TL1 Message Details	provides detailed information on the TL1 messages
Appendix A	BWM TL1 Parameter Tables	lists the TL1 parameter tables for: ■ access identifiers (AID)s ■ SDH and DS3 performance monitoring (PM) ■ SONET and SDH alarms/events descriptions ■ SONET and SDH protection switching events ■ password character sets
		<i>Continued on next page</i>

Using the OSEG, *continued*

Chapter Descriptions, *continued*

Table 1. Chapter Descriptions, *continued*

Chapter	Title	Description
	Abbreviations and Acronyms	expands common telecommunication abbreviations and acronyms
	Glossary	defines SONET and SDH telecommunication terms
	Index	lists specific subjects and their corresponding page numbers

WaveStar BandWidth Manager Documentation Set

Introduction

The Lucent Technologies documents listed in this section provide additional information about WaveStar BandWidth Manager.

Table

Table 2 lists the documents included in the WaveStar BandWidth Manager documentation set.

Table 2. The WaveStar BandWidth Manager Documentation Set

Document Number	Title
365-370-100	<i>WaveStar BandWidth Manager Installation Manual</i>
365-370-101 108861311	<i>WaveStar BandWidth Manager Applications, Planning, and Ordering Guide (SONET Edition)</i>
365-370-101 SDH 108860933	<i>WaveStar BandWidth Manager Applications, Planning, and Ordering Guide (SDH Edition)</i>
365-370-109 108847112	<i>WaveStar BandWidth Manager User Operations Guide</i>
365-370-110 108847132	<i>WaveStar BandWidth Manager Alarm Messages and Troubleclearing</i>
365-370-103	<i>WaveStar BandWidth Manager Job Aids</i>
365-370-104 108860941	<i>WaveStar BandWidth Manager Operations Systems Engineering Guide</i>
365-370-105	<i>WaveStar BandWidth Manager Software Release Description</i>

Description of Documentation Set

Introduction	This section briefly describes the documents that are included in the WaveStar BandWidth Manager documentation set.
Installation Manual	The <i>WaveStar BandWidth Manager Installation Manual</i> is a step-by-step guide to system installation and setup. It also includes information needed for pre-installation site planning and post-installation acceptance testing.
Applications, Planning, and Ordering Guide	The <i>WaveStar BandWidth Manager Applications, Planning, and Ordering Guide</i> is created for use by the Lucent Account Team, customer network planners, analysts, and managers. It presents a high-level overview of the system, describes its applications, gives planning requirements, engineering rules, ordering information, and technical specifications. The <i>WaveStar BandWidth Manager Applications, Planning, and Ordering Guide</i> is available in separate SONET and SDH editions.
User/Service Manual	The <i>WaveStar BandWidth Manager User/Service Manual</i> provides a detailed description of the product step-by-step information for use in daily system operations. The manual demonstrates how to perform system provisioning, operations, and administrative tasks. It also provides procedures for routine maintenance, troubleshooting, diagnostics, component replacement, and acceptance testing.
Job Aids	The <i>WaveStar BandWidth Manager Job Aids</i> are laminated 8.5- x 11-inch sheets with information organized in diagram and table form. The various sheets may provide unit numbering diagrams, system mappings, equipment module diagrams and tables, system test procedures, and performance monitoring procedures.

(Continued on next page)

Description of Documentation Set, *continued*

Operations Systems Engineering Guide	The <i>WaveStar BandWidth Manager Operations Systems Engineering Guide</i> provides detailed information on TL1 commands, messages, and error codes.

Software Release Description	The <i>WaveStar BandWidth Manager Software Release Description</i> provides software installation information and describes release-specific software details.

Documentation Ordering Information

Introduction

This section describes ordering

- additional copies of this document and requesting placement in the standing order list
- electronic documentation (CD-ROMs)
- product drawings from the Lucent Technologies Customer Information Center (CIC)

Ordering Standard Documentation

Table 3 provides the information necessary for commercial customers to order standard documentation or request placement on the standing order list (for reissues of any document) by mail, internet, telephone, or fax.

Table 3. Placing an Order

Mailing and Internet Addresses	Telephone Numbers	Fax Numbers
Mailing Address: Lucent Technologies Inc. Customer Information Center Attention: Order Entry Section 2855 N. Franklin Road P.O. Box 19901 Indianapolis, IN 46219 Internet Address: www.lucentdocs.com	From USA: 1-888 LUCENT-8 (1-888-582-3688)	1-800-566-9568
	From North American Region (NAR): 1-317-322-6619	1-317-322-6359
	From Asia/Pacific Region and China; Caribbean/Latin America Region (CALA): 1-317-322-6411	1-317-322-6699
	From Europe/Middle East/Africa (EMEA): 1-317-322-6416	1-317-322-6699

RBOC/BOC Customers

RBOC/BOC customers should process orders through your Company Documentation Coordinator.

(Continued on next page)

Documentation Ordering Information, *continued*

Ordering CD-ROMs

Documentation for WaveStar BandWidth Manager is available on CD-ROM. Table 4 lists the contacts for specific information about CD-ROM documentation.

Table 4. Ordering CD-ROM Documentation

IF you wish to...	THEN contact...
order an annual subscription	■ your Account Executive. ■ Lucent Technologies Customer Information Center (contact information is provided in Table 3 on page xxx)
obtain pricing information	
obtain a list of documents available on CD-ROM	

Ordering Drawings

To order any of the drawings listed in Table 5, contact Lucent Technologies' Customer Information Center (contact information is provided in Table 3 on page xxx).

(Continued on next page)

Documentation Ordering Information, *continued*

Available Drawings Table 5 lists the drawings available from the Customer Information Center (CIC) for the WaveStar BandWidth Manager 1152/384 and 4608/1536 platforms. These drawings provide valuable product information.

Table 5. Drawings Available from CIC

Drawing Number	Drawing Title
801-802-001-2	Domestic Floor Plan Data Sheet 3-Aisle
801-802-001-3	Domestic Floor Plan Data Sheet 4-Aisle
801-802-001-4	ETSI Floor Plan Data Sheet 3-Aisle (Raised-Floor)
801-802-001-5	ETSI Floor Plan Data Sheet 4-Aisle (Raised-Floor)
ED9C280-28	WaveStar BandWidth Manager Cable Assembly Kits
ED9C280-30	Control/Switch Complex: Three Bays
ED9C280-31	Universal I/O Bay
ED9C280-40	WaveStar BandWidth Manager Software

Documentation Ordering Information, *continued*

Payment

One of the following methods of payment is required with orders from commercial customers:

- check (payable to Lucent Technologies)
- money order (payable to Lucent Technologies)
- purchase order number
- charge number

**NOTE:**

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

Commenting on the OSEG

Introduction

Because customer satisfaction is extremely important to Lucent Technologies, every attempt is made to encourage feedback from information product customers.

Customer Comment Form

A customer comment form is located immediately after the title page of this document. Please fill out the form and fax it to the number provided on the form.

Address for Comments

If the customer comment form is missing, send or fax comments about this document to:

Lucent Technologies Inc.
Customer Training and Information Products
Building 21, Room 3A-06
1600 Osgood Street
North Andover, MA 01845

Fax: 1-978-960-6835

Training

Introduction

The Customer Training and Information Products (CTIP) organization offers a formal training package to complement your product needs.

Suitcasing

Suitcasing is available for all WaveStar BandWidth Manager training courses.

Registering for a Course

To register for a course or obtain information for the continental United States, please call **1-888-LUCENT (582-3688): Prompt 2.**

To register for a course or obtain schedule information for outside the continental United States, please contact your in-country representative or call **+1-407-767-2798,**

Available Training Courses

Introduction

This section describes the WaveStar BandWidth Manager training courses that are available.

Applications, Architecture, and Planning

Content

The WaveStar BandWidth Manager Applications, Architecture, and Planning Course (TR3800, SONET edition and TR3802, SDH edition) provides a detailed introduction to WaveStar BandWidth Manager, covering the features and benefits of the network solutions, equipment functions and requirements, and network planning.

Audience

Lucent marketing/sales personnel, customer network planners and engineers, product managers, technical consultants, and account representatives.

Course Length

2 days

Operations and Maintenance

Content

The WaveStar BandWidth Manager Operations and Maintenance Course (TR3801, SONET edition and TR3803, SDH edition) includes detailed descriptions of initial turnup and day-to-day operations and maintenance tasks, as well as emphasis on developing skills using 365-370-109, WaveStar BandWidth Manager User Operations Guide and 365-370-110, WaveStar BandWidth Manager Alarm Messages and Troubleclearing Guide. The course covers the physical equipment and using the new GUI-based WaveStar CIT to provision equipment, enter cross-connections, perform administrative functions, run diagnostic tests, and perform manual protection switching.

Audience

Technicians, installers, maintenance engineers, technical support personnel, product evaluators, and anyone desiring operations and maintenance information for WaveStar BandWidth Manager.

Course Length

3 days

Introduction

1

Contents

■ Overview

2

Overview

Purpose

This document provides detailed information on the Lucent Technologies WaveStar™ BandWidth Manager Transaction Language (TL1) commands/messages and interface.

TL1 Interface

The 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.

Contents

Operations Systems Interfaces Overview	2
OSI Interface	4
■ OS Communication over OSI	5
■ OSI LAN Interface Details	10
■ OSI DCC Interface Details	11
■ Duplex DCC Controllers	17
■ OSI Technical Specifications	21
Serial Gateway - Basic Mode	34

Operations Systems Interfaces Overview

Introduction

Operations Systems (OSs) need to communicate with Network Elements (NEs) such as BWM NEs, for the purposes of sending control information and receiving status and alarm information. OS communication over OSI can occur either:

- over OSI directly for OS management of an NE (see Figure 2-1), or
- over non-OSI WANs (see Figure 2-2, Figure 2-3, and Figure 2-4) with the help of operations communications interfaces supported on an intermediate network entity, known as the Network Communications Controller (NCC).

NCC Options for the BWM NE

NCC supports OSI LAN for communications towards the BWM 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 protocol conversion options see Chapter 2 of the *Network Communications Controller, Operations Systems Engineering Guide*.

NCC Serial Gateway Option for the BWM NE

The Serial Comm Port of the NCC may be used by PC/CITs to communicate with BWM NEs. For more information on this option see the Serial Gateway - Basic Mode section later in this chapter.

Operations Systems Interfaces Overview, *continued*

**Additional
Information**

For information on TL1 commands/messages for WaveStar BandWidth Manager, refer to Chapter 3, *BWM TL1 Message Details*.

For information on Directory Services (SDS, TARP) for WaveStar BandWidth Manager, 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*.

OSI Interface

Overview

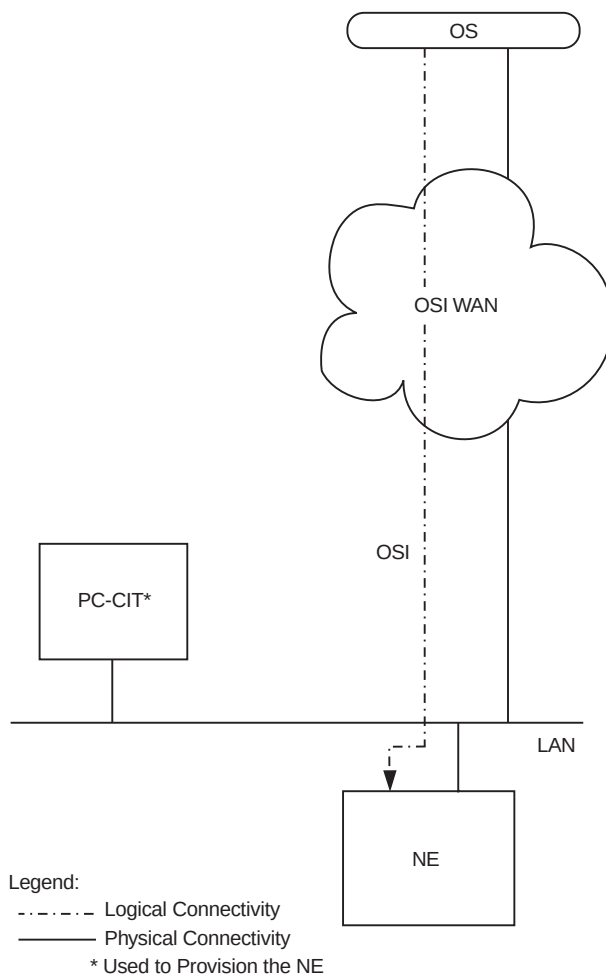
This section discusses:

- OS Communication over OSI
 - OSI LAN Interface Details
 - OSI DCC Interface Details
 - Duplex DCC Controllers
 - OSI Technical Specifications
-

OS Communication over OSI

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.



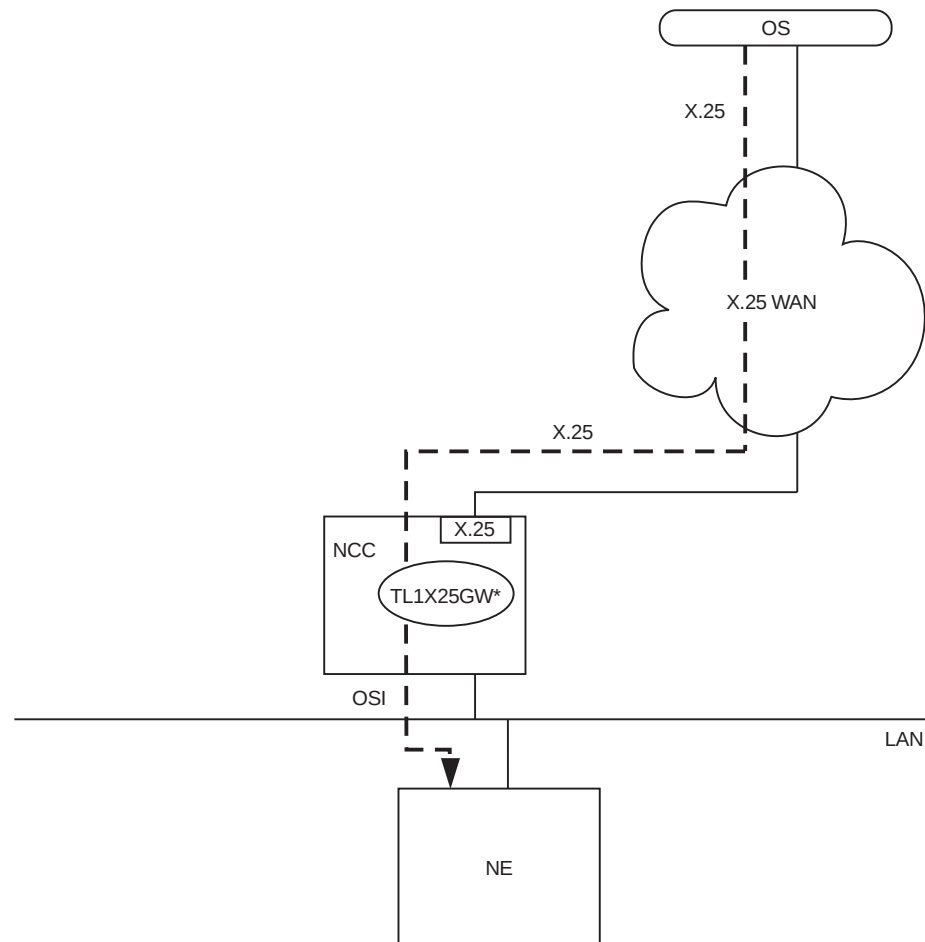
NC-OSEG-016

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

OS Communication over OSI, *continued*

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

Figure 2-2 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.



Legend:

— — — Logical Connectivity
 ————— Physical Connectivity

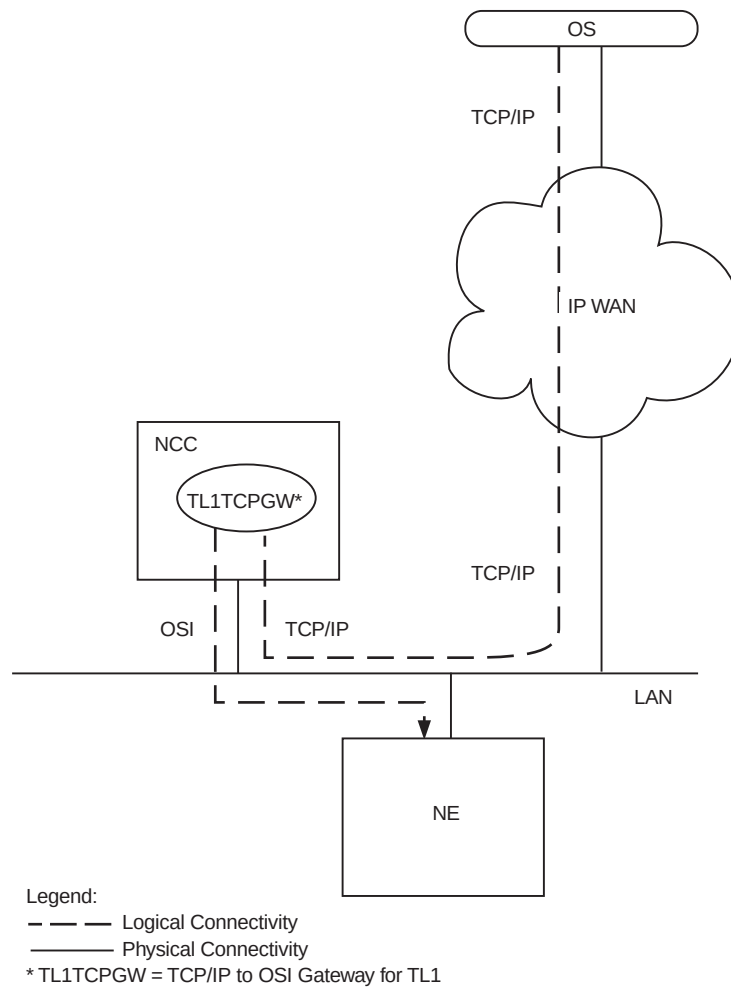
*TL1X25GW = X.25 to OSI Gateway for TL1

NC-OSEG-014

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

OS Communication over OSI, *continued***OS Communication over TCP/IP through the NCC to the NE**

Figure 2-3 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.



NC-OSEG-20

Figure 2-3. OS Communication over TCP/IP through the NCC to the NE

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

The diagram illustrates a network architecture where an OSI-based Network Control Center (NCC) is connected to an IP-based Wide Area Network (WAN) and a Local Area Network (LAN). The NCC contains a Transport Subsystem (TSB*). The NCC is connected to the LAN via an OSI protocol stack. The LAN is connected to the WAN via an IP protocol stack. The WAN is connected to an external network (OS) via an IP protocol stack. The diagram shows the flow of data from the NCC through the OSI stack to the LAN, and from the LAN through the IP stack to the WAN and then to the external network.

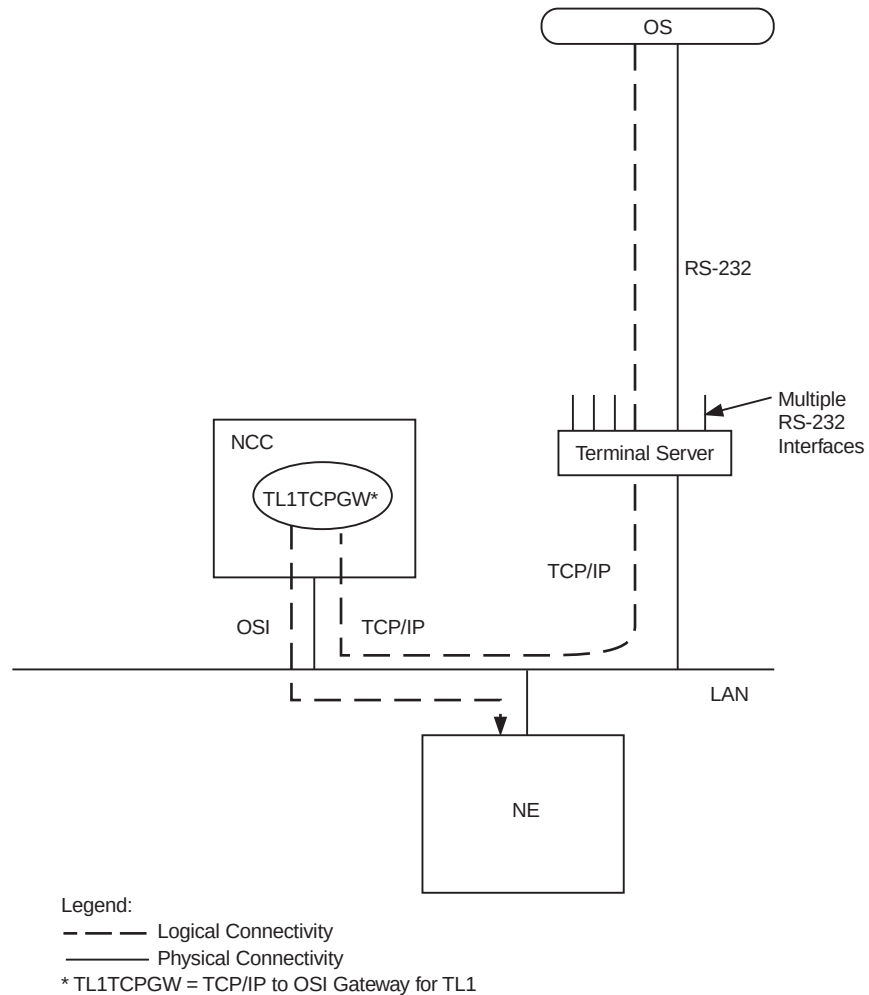
NC-OSEG-013

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OS Communication over OSI, *continued*

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 OSs that use 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 2-5 shows the physical and logical connectivity between the OS and the NE.



NC-OSEG-21

Figure 2-5. OS Communication over RS-232 through the NCC to the NE

OSI LAN Interface Details

OSI References

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

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

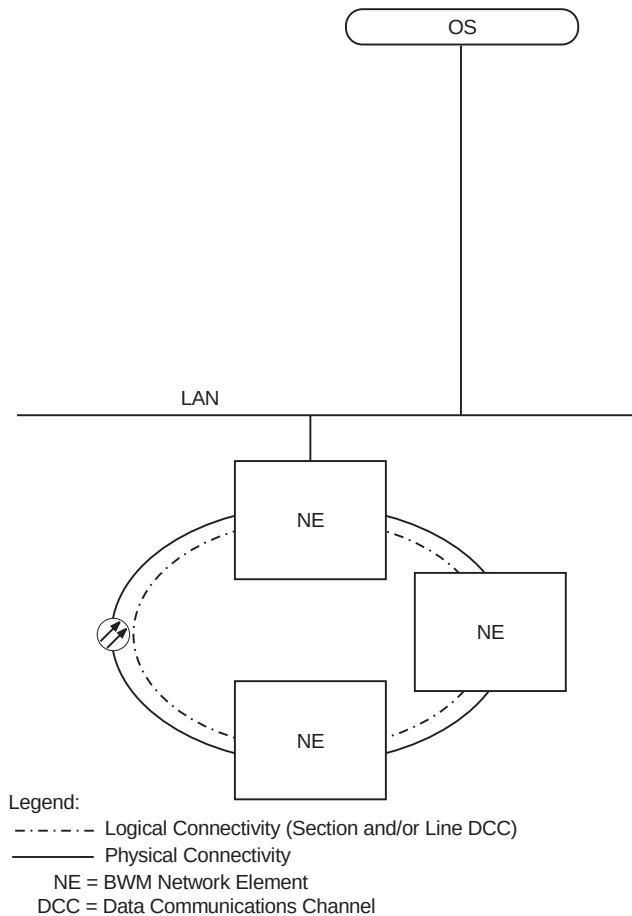
SONET Operations Communications via DCC

SONET operations communications architectures vary by application and therefore, are dependent upon network topology and NE configurations. As far as the BWM 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 2-6.)

OSI DCC Interface Details, *continued*

DCC Communications Interfaces

Figure 2-6 shows the two types of DCC communications interfaces of a BWM NE.



NC-OSEG-36

Figure 2-6. OS to NE Communications Over LAN and NE to NE Communications Over DCC

OSI DCC Interface Details, *continued*

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.
-

OSI DCC Interface Details, *continued***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	<i>Section</i>	<i>Overhead</i>			<i>Payload</i>
2					
3	Data Com D1	Data Com D2	Data Com D3		
4	<i>Line</i>	<i>Overhead</i>			
5				<i>Path</i>	
6	Data Com D4	Data Com D5	Data Com D6	<i>Overhead</i>	
7	Data Com D7	Data Com D8	Data Com D9		
8	Data Com D10	Data Com D11	Data Com D12		
9					

OSI DCC Interface Details, *continued*

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 microseconds with only one STS-1 being considered per STS-N frame.

Table 2-3. Section and Line DCC Line Rates

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

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.

OSI DCC Interface Details, *continued*

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)

Duplex DCC Controllers

Description

Duplex DCC Controllers enhance the availability of a BWM in a network by introducing a second redundant DCC controller in the system shelf of the BWM.

The two DCC controllers are bridged. During normal operation one DCC controller is in *active* mode and the other one in *standby* mode. If the active DCC controller fails, the system detects the failure of the active DCC controller and initializes the standby DCC controller.

Duplex DCC Controllers in Bridged Configuration

[illegible]

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Duplex DCC Controllers, *continued*

System Boot and DCC Initialization

When the BWM is “booted”, the System Controller (SYSCTL on the system shelf) downloads the same software image into both DCC controllers, DCC-1 and DCC-2. Each DCC controller performs a self-test and then goes into a hold/standby state, waiting for an initialization command. The System Controller only initializes the DCC controller that is designated *active*. By default, DCC-1 is the active controller, and DCC-2 is the standby controller. (See Figure 2-7 for more information.)

Protection Group

Both DCC controllers (DCC-1 and DCC-2) are part of a protection group which is automatically created on startup. If either of the DCC controllers is missing, there is an equipment alarm (a standing alarm). However, if either of the DCC controllers are independent of each other (not in duplex mode), then the alarm can be masked. (See the appropriate protection group TL1 commands in Chapter 3 for more information on masking alarms and retrieving protection group information in Duplex DCC controllers.)

Automatic Protection Switching (APS)

If the active DCC controller fails, an automatic protection switch occurs, initializing the standby controller which is expected to be fully operational in less than 60 seconds. A manual switch, accomplished via the appropriate protection switch TL1 command, is also possible. Protection switches are non-revertive; no release of protection switch is required. No track is kept of which DCC controller is currently active; therefore, a system reboot automatically restores the default DCC controller (DCC-1) to active mode.

After a protection switch has occurred, the failed DCC controller gets a fresh copy of the software image. If this controller passes self test, it will be ready for reinitialization, or else it will be locked out.

Multiple Failures and Loop Prevention

If an active DCC controller fails, and the standby also fails, an attempt is made to switch back to the first DCC controller. Each DCC controller is allowed a maximum of two attempts to reboot and reinitialize before being locked out.

Duplex DCC Controllers, *continued*

TL1 Commands which Support Duplex DCC Controllers

TL1 commands which support Duplex DCC Controllers are:

- OPR-PROTNSW - Operate Protection Switch
- RTRV-PROTN-GRP - Retrieve Protection Group
- RTRV-PROTN-LST - Retrieve Protection Group List

These TL1 commands work only for the DCC controllers on the system shelf (see Figure 2-7). Duplex DCC controllers have protection groups automatically created for them. As a result, the ENT-PROTN-GRP and DLT-PROTN-GRP TL1 commands are not required. In addition, to release the protection group of the controllers, the OPR-PROTNSW TL1 command must be executed twice.

OSI Technical Specifications

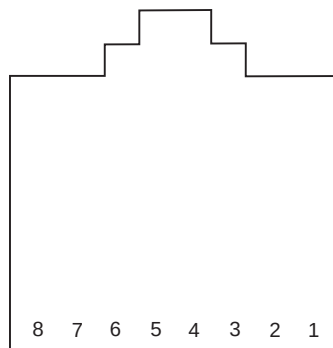
Introduction

The following 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).

OSI Technical Specifications, *continued*

**LAN RJ45
Connector**

The RJ45 connector shown in Figure 2-7 is used by the NCC to connect to the LAN. For signal descriptions assigned to the pins see Table 2-5.



NC-OSEG-04

Figure 2-8. RJ45 Connector

**LAN RJ45
Connector Table**

Table 2-5. RJ45 Pin Configuration

Pin	Color Code	Signal Description
1	Blue	Protective Ground (Shield)
2	Orange	Transmitted Data
3	Black	Received data
4	Red	Request To Send (RTS)
5	Green	Clear To Send (CTS)
6	Yellow	DCE Ready
7	Brown	Signal Ground
8	White	Received Line Signal Detector

OSI Technical Specifications, *continued*

**LAN Physical and
MAC Layer
Technical
Specifications Table**

The parameters in Table 2-6 are non-provisionable.

Table 2-6. 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 μsecs
Slot Time	512 bit times
MA-UNITDATA Request/Indication	Yes
MA-UNITDATA-STATUS Indication	No

OSI Technical Specifications, *continued*

**LAN Logical Link
Control
Specifications Table**

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

Table 2-7. 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 Provisionable
Parameters Table**

Table 2-8 represents the LAN parameters that are user-provisionable:

Table 2-8. LAN User-Provisionable Parameters

Parameter	Range	Default Value	Increment
LAN Status - External LAN	Enabled, Disabled	Enabled	Not Applicable
LAN Status - Internal LAN	Enabled, Disabled	Enabled	Not Applicable

OSI Technical Specifications, *continued*

**DCC - LAPD
Specifications Table**

Table 2-9 shows the LAPD non-provisionable parameters.

Table 2-9. DataLink Layer: LAPD (ITU-T Q.920/921) Attribute Values

Parameter	Operating Value
N201	512

**DCC - LinkID
Specifications Table**

Table 2-10 shows the LinkID Protocol non-provisionable parameters.

Table 2-10. LinkID Protocol (Lucent-Proprietary)

Parameter	Operating Value
SAPI	61
TEI	0

**DCC - LAPD
Provisionable
Parameters Table**

Table 2-11 shows the parameters of the DataLink layer that are user-provisionable.

Table 2-11. DataLink Layer User-Provisionable Parameters

Parameter	Range	Default Value	Increment
T200 timer	0.2 - 25s	1s	0.1sec
N200	1 - 255	3	1
k	1 - 127	7	1

OSI Technical Specifications, *continued***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 ^a	Supported
Category 2 Functions ^b	Not supported
Category 3 Functions ^c	Not supported ^d
PDU Lifetime	255 hops ^e
Segmenting Reassembly queue length	50
NSDU-SNDATA mapping	always 1-1
NSAP length	20 octets ^f
N-SEL for NET (Network Entity Title)	00 hex
N-SEL for SDH TP4	01 hex
N-SEL for TSB (Transport Service Bridge)	0D hex
N-SEL for SONET TP4	1D hex
N-SEL for TARP	AF hex
CLNP echo	Request/Response
E/R Flag	Yes (default = off)

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

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

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

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

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

f. ISO DCC syntax - Note: In addition to operating in a SONET environment, BWM can also route SDH management traffic (with variable NSAP lengths). However, BWM is managed as a SONET entity.

OSI Technical Specifications, *continued*

**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 x ESCT + 1
IS Holding Timer (ISHT)	2 x ISCT + 1
IIH Timer	10s
Holding Multiplier	3
Send ES Hellos	No

OSI Technical Specifications, *continued*

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
<i>Continued on next page</i>	

OSI Technical Specifications, *continued*

**IS-IS Network
Layer Specifications
Table, *continued***

Table 2-14. Network Layer: IS-IS (ISO 10589) Attribute Values, *continued*

Parameter	Operating Value
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

OSI Technical Specifications, *continued***Network Layer
Provisionable
Parameters Table**

Table 2-15 represents the parameters of the Network Layer protocols (CLNP, ES-IS, IS-IS) that are user-provisionable.

Table 2-15. Network Layer User-Provisionable Parameters

Parameter	Range	Default Value	Increment
NSAP-AFI	1 octect	39 hex	1
NSAP-IDI	2 octects	840F hex	1
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
LAN Link metric (Internal LAN)	1 - MLM	14	1
ESCT timer	10 - 1000s	10s	10s
ISCT timer	10 - 1000s	10s	10s
IS L2 Routing	Enabled, Disabled	Disabled	Not Applicable

OSI Technical Specifications, *continued***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
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
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

OSI Technical Specifications, *continued*

**TP4 Transport
Layer Provisionable
Parameters Table**

Table 2-17 represents the parameters of the Transport Layer protocol (TP4) that are user-provisionable:

Table 2-17. Transport Layer: TP4 (ISO 8073) User-Provisionable Parameters

Parameter	Range	Default Value	Increment
W (Window Time)	1 - 255s	16s	1s
Credit window size	1 - 15	5	1

OSI Technical Specifications, *continued*

Session Layer Specifications Table

The parameters in Table 2-18 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 2-18. 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 2-19 are non-provisionable. This table represents the values held by the attributes of the presentation layer.

Table 2-19. 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

Serial Gateway - Basic Mode

Description

The Serial Gateway - Basic Mode feature allows management of NEs by providing an additional option for PCs (e.g., PC/CIT) to communicate with them. This feature is useful if a PC/CIT does not have an external LAN interface running TCP/IP.

Serial Gateway - Basic Mode, *continued*

Using the Serial Gateway Software in the NCC

As shown in Figure 2-9, the Serial Comm Port of an NCC is connected to a PC/CIT running Hyperlink software. This connection allows the PC/CIT to launch communications with the NE by sending TL1 messages, first through the Serial Gateway, and then over the OSI-LAN network. The Serial Comm Port is bidirectional and can support full duplex communication.

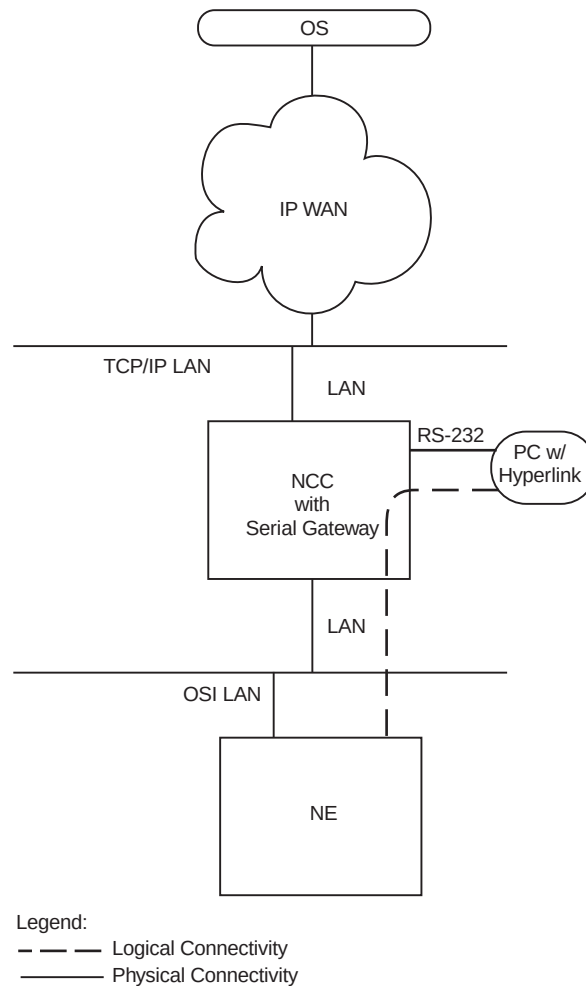
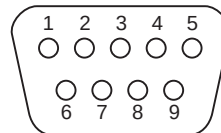


Figure 2-9. OS Communication from the PC/CIT through the NCC (Serial Gateway) to the NE

Serial Gateway - Basic Mode, *continued*

Female DB9/mini-DB9 Connector Figure

Figure 2-10 shows the female DB9/mini-DB9 Serial Comm Port connector to the NCC. For signal descriptions assigned to the pins see Table 2-20.



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Figure 2-10. Female DB9/Mini-DB9 Connector

DB9/Mini-DB9 Connector Table

When running the serial EIA-232-D protocol, which supersedes RS-232C specifications, the following pin definitions shown in Table 2-20 for the DB9 (or mini-DB9 also called 9-pin micro D-sub) connector apply.

Table 2-20. DB9/Mini-DB9 Connector Pins and Signal Descriptions

Pin	Signal	Signal Name
1	DCD	Data Carrier Detect
2	RxD	Received Data
3	TxD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Ready to Send
8	CTS	Clear to Send
9	RI	Ring Indicator

Serial Gateway - Basic Mode, *continued*

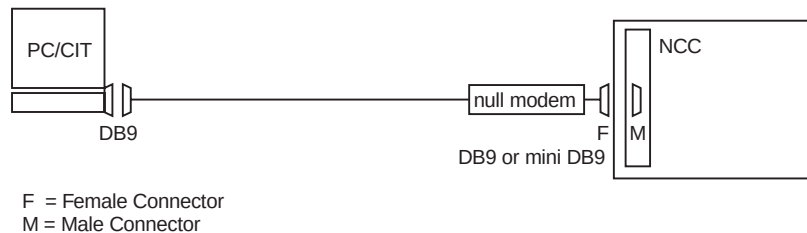
NCC CPU Model Determines Connector Type

The NCC uses either a male DB9 or mini-DB9 connector depending upon its CPU model. The NCC has two CPU models:

- The older model with a 720 CPU provides a serial port with a male DB9 connector.
- The newer model with a 760 CPU provides a serial port with a male mini-DB9 connector.

Connection Setup between a PC/CIT and an NCC

The connection setup for the Serial Comm Port between a PC/CIT and an NCC, shown in Figure 2-11, uses DB9 and/or mini-DB9 serial port connectors depending upon the CPU model used by the NCC.



NC-BWM-07

Figure 2-11. Connection Setup between a PC/CIT and an NCC

Third-Party Vendors

The null modem (see Figure 2-11) and the cable for the NCC 760 CPU are available from third-party vendors.

Serial Gateway - Basic Mode, *continued*

Communications Parameters

Communications parameters for the EIA-232 Serial Comm port are: 19,200 bits per sec. / 8 data bits / No parity bits / 1 stop bit.

Reaching the Serial Gateway Application

When establishing a telnet session with the NCC, the Serial Gateway application can be reached via the TCP/IP port number, 1243, by typing:

```
telnet IP_ADD 1243
```

How to Get into Basic Mode

After establishing a telnet session with the NCC, type the following commands to invoke Basic Mode of the Serial Gateway:

```
TL1SERIALGW = enable
```

```
MML = disable
```

L

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DLT-PROTN-GRP	77
DLT-RSVN	81
DLT-TCA-PROF	85
DLT-ULSDCC-L4	89
DLT-USER-SECU	93
ED-ASAP-PROF	97
ED-CRS	107
ED-DAT	113
ED-EQPT	117
ED-NE	121
ED-NE-SECU	125
ED-PID	129
ED-PROTN-GRP	133
ED-PROTN-TYPE	141
ED-rr	145
ED-RSVN	175
ED-STATE-EQPT	179
ED-TCA-PROF	183
ED-USER	195
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ENT-ASAP-PROF	205
ENT-CRS	211
ENT-EQPT	223
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ENT-PROTN-GRP	239
ENT-ROLL	247
ENT-RSVN	253
ENT-TCA-PROF	257
ENT-ULS	261
ENT-ULSDCC-L3	267
ENT-ULSDCC-L4	273

ENT-USER-SECU	281
INH-ALM	287
INH-MSG	289
INIT-REG	293
INIT-SYS	297
OPR-LPBK	301
OPR-PROTNSW	305
OPR-SYNCNSW	315
REPT ALM	319
REPT COND	325
REPT DBCHG	331
REPT EVT	335
REPT EVT SESSION	343
REPT SW	345
RLS-LPBK	347
RLS-PROTNSW	351
RLS-SYNCNSW	359
RTRV-ALM	363
RTRV-AO	371
RTRV-ASAP-PROF	375
RTRV-ATTR-ALM	387
RTRV-ATTR-MSG	391
RTRV-COND	395
RTRV-CRS	401
RTRV-EQPT	413
RTRV-FECOM	421
RTRV-FECOM-LAN	427
RTRV-FLT-STATE	431
RTRV-HDR	437
RTRV-LOG-ALM	455
RTRV-LOG-NTFCN	459
RTRV-LOG-PROTNSW	463
RTRV-LOG-SECU	467
RTRV-LOG-USER	473
RTRV-LPBK	477
RTRV-MAP-NEIGHBOR	483

RTRV-MAP-NETWORK	489
RTRV-MAP-RING	493
RTRV-MNTC	501
RTRV-NE	505
RTRV-NE-SECU	509
RTRV-PM	513
RTRV-PRMTR-DATA	531
RTRV-PRMTR-SFTWR	539
RTRV-PROTN-GRP	547
RTRV-PROTN-LST	567
RTRV-PROTN-PPG	573
RTRV-PROTN-TYPE	577
RTRV-rr	581
RTRV-RSVN	619
RTRV-STATE-EQPT	625
RTRV-SYNCN	633
RTRV-TACC	647
RTRV-TCA-ASGNMT	653
RTRV-TCA-PROF	657
RTRV-ULS	671
RTRV-ULSDCC-L3	675
RTRV-ULSDCC-L4	681
RTRV-USER	689
RTRV-USER-SECU	693
SET-ATTR-ALM	699
SET-SID	703
SET-SYNCN	707
SND-TARP-PDU	713
TEST-ALM	717
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TL1 Command Conventions

Introduction

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 Response Output

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 access identifier (aid) text is displayed in lowercase in both the user interface, and the same is done for the TL1 interface. The conddescr, almmsg, and error text are output in both lower and UPPERCASE for readability.

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 `courier` type. 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.

TL1 Command Conventions, *continued*

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.

NAME

ACT-USER: Activate User

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): Any

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

COMMAND PRIORITY

4.

INPUT FORMAT

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

DESCRIPTION

The **ACT-USER** command can be initiated to set up a login session with the network element.

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

A maximum of one login per active session is allowed. Any subsequent attempt on the same session is denied.

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

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

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

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

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 (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	User Identifier. This parameter is available starting in Release 1. This is the unique user login identifier for which the ACT - USER login command is intended. Grouping and/or ranging of <i>uid</i> values for the ACT - USER command are not allowed. Valid <i>uid</i> 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.
<i>ctag</i>	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 (cont 2 of 2)

Parameter Name	Description
<i>pid</i>	Password Identifier. This required parameter is the confidential password authenticator for the given <i>uid</i>. Valid <i>pid</i> 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 1.2, the special characters are defined in the 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 3, when a user logs in successfully, the following response is returned:

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

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.
*/
;
```

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 (cont 1 of 3)

Parameter Name	Description
<i>uid</i>	User Identifier. This parameter is available starting in Release 1. This is included in the command by the OS/CIT and repeated by the network element as a confirmation that the given user identifier is successfully logged in. Value: Any combination of up to 10 alphanumeric characters.
<i>lastdate</i>	This parameter is available starting in Release 1. This is the date of the last session established by this <i>uid</i> . Values: YY-MM-DD
<i>lasttime</i>	This parameter is available starting in Release 1. This is the time of the last session established by this <i>uid</i> . Values: HH-MM-SS

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

Parameter Name	Description
<i>attempts</i>	This parameter is available starting in Release 1. This is the number of unsuccessful login attempts since the last successful login session on this network element. Values: Any integer ranging from 0 to 98. Starting in Release 3.1, when the number of denied ACT - USER commands due to an invalid <i>uid/pid</i> pair reaches/ exceeds the maximum number of consecutive invalid session setup attempts (<i>thrshld</i>, refer to the ED - NE - SECU command) for the same <i>uid</i> within the interval specified by <i>intrvl</i> (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.
<i>systype</i>	This parameter is available starting in Release 1. This specifies the type of system. Values: WaveStar_2.5G_10G, WaveStar_BandWidth_Manager, Network_Communication_Controller, WaveStar_10G_STM64 WaveStar_4F192 WaveStar_uBWM
<i>release</i>	This parameter is available starting in Release 1. This is the software Release number of the system, in the form xx.yy.zz. Example: 01.02.03.
<i>upc</i>	User Privilege Code List. See the ENT - USER - SECU command for a description of this parameter.
<i>spec_block</i>	<i>sysavst</i> System Availability Status. This parameter is available starting in Release 3. 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.

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

Parameter Name	Description
	<i>tmleft</i> Time left before password expires, in days. This parameter is available starting in Release 3. Values: ■ 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:mvd1m5:123456:kj5lee+3;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
"mvd1m5:97-12-31,09-00-00,1,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:mvd1m5:123456::kj5lee+3;

LT-WBM-789 98-01-01 08:00:00
M 123456 PRTL
"mvd1m5:97-12-31,09-00-00,23"
/* 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 24 login sessions for a "normal" user with an additional 2 sessions for a superuser. (Once the maximum of 24 sessions has been reached, no more "normal" user sessions will be allowed. No more superuser sessions are allowed once the 24 +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

ED-PID

DLT-USER-SECU

ED-USER-SECU

ENT-USER-SECU

ACT-USER
BWM TL1 Message Details

ACT-USER
WaveStar™ BandWidth Manager R3.1

RTRV - USER - SECU

NAME

ALW-ALM: Allow Alarm

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

- 1.

INPUT FORMAT

ALW-ALM: *tid::ctag;*

DESCRIPTION

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

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

INPUT PARAMETERS

Table 3-3. ALW-ALM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for input parameters syntax and description of this parameter.
<i>ctag</i>	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 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 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 BandWidth Manager, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

- 1.

INPUT FORMAT

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

DESCRIPTION

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

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

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

INPUT PARAMETERS

Table 3-4. ALW-MSG Input Parameters (cont 1 of 2)

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

Table 3-4. ALW-MSG Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	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 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 apply to the **ALW-MSG** command.

RELATED TL1 MESSAGES

INH-MSG

ED-USER-SECU

RTRV-A0

RTRV-ATTR-MSG

NAME

APPLY: Install New Software Generic

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

- WaveStar BandWidth Manager, Release 1.2

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 3.0, 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 but will not exit MCOND until the user manually requests to exit MCOND.
- 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.

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 3-5. APPLY Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>qualifier</i>	Allowed values for the <i>qualifier</i> parameter are: ■ INSTALL causes the software download to be installed. This is the default action if no value is specified for <i>qualifier</i>. 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

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 effected 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 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.

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 condition will cause an SROF error response:

- Install 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 */
;
```

The following condition will cause an ENSG error response:

- Generic not available.

RELATED TL1 MESSAGES

CPY-MEM

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

APPLY
BWM TL1 Message Details

APPLY
WaveStar™ BandWidth Manager R3.1

NAME

CANC-USER: Cancel User

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): Any

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

COMMAND PRIORITY

- 1.

INPUT FORMAT

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

Beginning in Release 3.0, 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 3-6. **CANC - USER** Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for input parameter syntax and description of this parameter.
<i>uid</i>	User Identifier. This parameter is available starting in Release 3.0. 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. Values: See the description of the <i>uid</i> 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 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 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 BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UFC/UCAL): S5

COMMAND PRIORITY

- 1.

INPUT FORMAT

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

DESCRIPTION

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

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

INPUT PARAMETERS

Table 3-7. CANC-USER-SECU Input Parameters (cont 1 of 2)

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

Table 3-7. CANC-USER-SECU Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>uid</i>	User Identifier. This is the <i>uid</i> 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 <i>uid</i> . 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 <i>uid</i> . Logging out all users by omitting the <i>uid</i> does not include the administrators logins. An administrator could log out the other administrator. Values: Refer to ACT-USER for the syntax/values.
<i>ctag</i>	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 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 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

CHG-ACCMD: Change Access Mode

The **CHG-ACCMD** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

- 1.

INPUT FORMAT

CHG-ACCMD-*modifier*:*tid*:*tatrib1*:*ctag*:::*spec_block*;

DESCRIPTION

The **CHG-ACCMD** command can be initiated by a user to change the test access mode of a test session in the network element.

The function of the **CHG-ACCMD** command is to change the test access mode without terminating the test access session.

The **CHG-ACCMD** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-8. CHG-ACCMD Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the change access mode command is to act on. Values: ■ STS1

Table 3-8. CHG-ACCMD Input Parameters (cont 2 of 3)

Parameter Name	Description
	■ STS3 ■ STS12 ■ STS48 ■ VC3 ■ VC4 ■ VC44C ■ VC416C
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>tatrib1</i>	Specifies the Primary Test Access Tributary. Allowable values are DS3 AIDs. See the AID table in OSEG Appendix A. Value: tributary AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	tstmde Specifies the Test Mode to be used. Values: ■ MONE Monitor E-end mode of test access. This test access mode monitors the E end of an idle tributary or a leg of a cross-connection. ■ SPLTE Split access E-end mode of test access. This test access mode splits the connection between the E end and F end of a 1WAY cross-connection or a leg of 2WAY cross-connection. Can also be used in an idle tributary. ■ MONEF Monitor E-end and F-end mode of test access. This test access mode monitors (E end and F end) both directions of a 2WAY cross-connection. ■ SPLTEF Split E-end and F-end mode of test access. This test access mode splits both directions of a 2WAY cross-connection to allow testing at both the E end and F end.

Table 3-8. CHG-ACCMD Input Parameters (cont 3 of 3)

Parameter Name	Description
■ MONF	Monitor F-end mode of test access. This test access mode monitors the F-end of a two-way cross-connection.
■ SPLTA	Split access "A" direction mode of test access. This test access mode splits the connection between the E and F tributaries of a one-way or two-way cross-connection to allow testing in the "A" direction.
■ SPLTB	Split access "B" direction mode of test access. This test access mode splits the connection between the E and F tributaries of a one-way or two-way cross-connection to allow testing in the "B" direction.
■ SPLTF	Split access F-end mode of test access. This test access mode splits the E-end and F-end connection of a two-way cross-connection to allow testing at the F-end.
■ SPLTAB	Split access A and B directions mode of test access. This test access mode splits both directions of a two-way cross-connection to allow testing in both the A and B directions.

OUTPUT FORMAT

The network element returns the following normal completion response to a successful **CHG-ACCMD** command if there are no failure conditions to report:

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

The network element returns a normal completion response to a successful **CHG-ACCMD** command if the test access mode value is unchanged using the **CHG-ACCMD** command.

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 **CHG-ACCMD** command by the network element. The example below changes the test access mode on a 1WAY THROUGH cross-connection to SPLTA. This example is applicable only to non-BLSR connections:

```
CHG-ACCMD-STS1:LT-WBM-789:37-1-#-#-06-4-1:123456:::TSTMDE=SPLTE;  
LT-WBM-789 99-05-07 19:17:53  
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 **CHG-ACCMD** command.

RELATED TL1 MESSAGES

CONN-TACC

DISC-TACC

RTRV-TACC

NAME

CONN - TACC: Connect Test Access

The **CONN - TACC** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

- 1.

INPUT FORMAT

CONN - TACC-*modifier:tid:tatrib1:ctag:::spec_block;*

DESCRIPTION

The **CONN - TACC** command can be initiated by a user to establish a test access(es) connection to a tributary or tributaries in the network element.

The ***modifier*** in the **CONN - TACC** command indicates the signal rate that is being tested. In the initial release of the test access, the signal rate can only be STS-1 and the test tributary can only be associated with a DS3 port.

If the test access session is established as MONE, the primary test tributary is used. If the test access session is established as MONEF, the primary test tributary is designated for accessing E-end incoming signal and the secondary test tributary is designated for accessing F-end incoming signal.

When dual tributary mode is specified, if the test tributary is DS3 interface and the "secondary test tributary AID" is omitted, the system shall assign the tributary next to the primary test tributary as its secondary test tributary. The system shall deny the command if the primary test tributary is the last addressable tributary on a given functional unit.

If there is no connection on E-end tributary, the F-end tributary AID parameter should be **NULL**.

If there are one or more cross-connections established on E tributary, the F-end tributary AID parameter is required to be entered.

The function of **CONN-TACC** command is to start a test access session and establish test access(es) connection to a tributary or tributaries in the network element.

The **CONN-TACC** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-9. CONN-TACC Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the connect test access command is to act on. Values: ■ STS1 ■ STS3 ■ STS12 ■ STS48 ■ VC3 ■ VC4 ■ VC44C ■ VC416C
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>tatrib1</i>	Specifies the primary test access tributary for this test session. Allowable values are DS3 AIDs. See the AID table in OSEG Appendix A. Value: tributary AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	<i>tatrib2</i> Specifies the secondary test access tributary for this test session. Optional. Allowable values are DS3 AIDs. See the AID table in OSEG Appendix A. Value: tributary AID. <i>etrib</i> Specifies the E tributary for the test session. This is a required parameter. See the AID table in OSEG Appendix A. Value: tributary AID.

Table 3-9. CONN - TACC Input Parameters (cont 2 of 2)

Parameter Name	Description
	<i>ftrib</i> Specifies the current F tributary for the test session. Optional. See the AID table in OSEG Appendix A. Values: tributary AID. <i>tstmdc</i> Specifies the Initial Test Access Mode to be used. Values: ■ MONE Monitor E-end mode of test access. This test access mode monitors the E end of an idle tributary or a leg of a cross-connection. This is the default test access mode. ■ MONEF Monitor E-end and F-end mode of test access. This test accesses mode monitors (E end and F end) both directions of a 2WAY cross-connection. ■ MONF Monitor F-end mode of test access. This test access mode monitors the F-end of a two-way cross-connection.

OUTPUT FORMAT

The network element returns the following normal completion response to a successful **CONN - TACC** command if there are no failure conditions to retributory:

```
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 **CONN - TACC** command by the network element. The example below establishes a test access connection

on a 1WAY THROUGH cross-connection with MONE as the test access mode.
This example is applicable to BLSR as well as non-BLSR connections:

```
CONN-TACC-STS1:LT-WBM-789:1-1-#-#-04-6-1:123456:::ETRIB=27-1-#-#-15-  
3-1,FTRIB=3-2-#-#-03-7-1,TSTMDE=MONE;  
  
LT-WBM-789 99-05-07 16:39:52  
M 123456 COMPLD  
;
```

The example below establishes a test access connection on a 2WAY THROUGH cross-connection with MONEF as the test access mode. This example is applicable to BLSR as well as non-BLSR connections:

```
CONN-TACC-STS1:LT-WBM-789:95-1-#-#-04-3-1:123456:::TATRIB2=48-1-#-#-  
05-6-1,ETRIB=3-2-#-#-16-4-1,FTRIB=27-2-#-#-04-5-1,TSTMDE=MONEF;  
  
LT-WBM-789 99-05-07 16:40:37  
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 **CONN-TACC** command.

RELATED TL1 MESSAGES

CHG-ACCMD

DISC-TACC

RTRV-TACC

NAME

CPY-MEM: Copy Memory

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

- WaveStar BandWidth Manager, Release 1.2

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 network element also contains a secondary memory (SEC). To copy from SEC to PRI or from PRI to SEC, **CPY-NVM** must be used. **CPY-NVM** can be used to copy data, software, or both.

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

INPUT PARAMETERS

Table 3-10. CPY-MEM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>from</i>	From Memory Type. Specifies the memory where the data is being transferred from: ■ "CIT,psel,ssel,tsel,nsap" Craft Interface Terminal ■ "EMS,psel,ssel,tsel,nsap" Element Measurement System ■ "PRI" PRImary Non Volatile Memory Details about psel,ssel,tsel,nsap are given later in the text. To use the FTP to FTAM gateway on the NCC for file transfers, specify the first subfield as EMS. EMS should no longer be used for FTP transfers. Instead, NCC should be used if the NSAP indicates the Network Communications Controller or FTTD if the NSAP indicates a File Transfer Translation Device.
<i>src</i>	A directory name. It is omitted if <i>from</i> is PRI .
<i>to</i>	To Memory Type. Specifies the memory where the data is being transferred to. See the parameter <i>from</i> in this table for values.
<i>dst</i> <i>class</i>	A directory name. It is omitted if <i>to</i> is PRI. Specifies the class of the copy: ■ DOWNLOAD Download the program. ■ BACKUP Copy the database to a backup location. ■ RESTORE Restore the database from a backup 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* as follows:

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

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

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

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

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

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

For example, if SSEL is 5454, then TSEL might be dc025454bc04870da379.

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

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

Examples of valid directory names are:

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

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

portion of the FTP file format must be masked prior to generating any autonomous messages.

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

Table 3-11. CPY-MEM Capabilities

<i>Class</i>	<i>From</i>	<i>Src</i>	<i>To</i>	<i>Dst</i>
DOWNLOAD DOWNLOAD	CIT, EMS EMS	directory directory	PRI CIT	directory
BACKUP	PRI		CIT, EMS	directory
RESTORE	CIT, EMS	directory	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.

CPY-NVM can be used to download the generic or database from SEC to PRI.

After **CPY-MEM** has been used to download a program, the generic must be installed by using the **APPLY** command so that the new generic starts executing. To remind the craft that installation is required, the autonomous message "Program installation required" will be sent after a download. When the program is installed, a "clear" autonomous message will be sent.

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.

CPY-NVM can be used to backup either the generic or database from PRI to SEC.

In addition to a manual backup via the **CPY-MEM** command, the network element can automatically back up the database. Automatic backups are periodic, with the time period (for example, once per hour) being a provisionable parameter (via **ED-NE**). Automatic backups go from PRI to SEC. Since the secondary memory can only store one copy of the database, an automatic backup will effectively erase any manual backup that was previously performed. If one wants to keep a database backup for a considerable time period, then it should be backed up to a remote file store instead of to the SEC.

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.

CPY - NVM can be used to restore either the generic or database from SEC 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.

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, then 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

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.

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:

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.

The following 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.

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

```
CPY-MEM:LT-WBM::123456:,"PRI",,"CIT,01,01,03,39840F800000000000000000000000000000006A11234500",
"\data\98_01_01",BACKUP;

      LT-WBM 98-01-01 08:00:00
M 123456 COMPLD
;
```

```
CPY-MEM:LT-WBM::123456::"CIT,01,01,03,39840F8000000000000000000000000A  
13244500","\\data\98_01_01","PRI",,RESTORE;  
  
    LT-WBM 98-01-02 08:00:00  
M   123456 COMPLD  
;  

```

```
CPY-MEM:NETID::3:"PRI",,"EMS,02,5353,5454,39840F800000000000000000000000000000104B3BFD5511D","ftp://johndoe:pwd123@ftphost.company.com/directorytostorein",BACKUP;

      LT-WBM 98-01-01 08:00:00
M 123456 COMPLD
;
```

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```
CPY-MEM:NE-TID::123456::"EMS,02,5353,5454,39840F8000000000000000000000  
8006A1978451D","ftp://ftphost.company.com","PRI",DOWNLOAD;  
  
LT-WBM 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

```

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

```

```

    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.

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

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

The following condition will cause an ENEQ error response:

- Insufficient file space.

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

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

The following condition will cause an EATN error response:

- Volume label is incorrect.

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

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

The following condition will cause an SRAC error response:

- Invalid NE type.

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

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

The following condition will cause an SARB error response:

- All resources busy.

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.

RELATED TL1 MESSAGES

APPLY

CPY-NVM

ED-NE

INIT-SYS

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

NAME

CPY-NVM: Copy NVM

The **CPY-NVM** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL):S4

COMMAND PRIORITY

2.

INPUT FORMAT

CPY-NVM: *tid::ctag::from,to,datatype[,restoremode];*

DESCRIPTION

The **CPY-NVM** command is used to copy from one non volatile memory (NVM) to another. Data, software, or both can be copied. The following NVM copy categorizes may be specified:

- Active primary NVM to secondary NVM
- Secondary NVM to active primary NVM.

The secondary NVM has storage for two versions of the database. When a copy is done to the secondary NVM, **CPY-NVM** automatically replaces the older version. When a copy is done from the secondary, **CPY-NVM** automatically uses the newer version. The older database copy is used for error recovery, it is not accessible by the user.

CPY-MEM, a related command, copies data/software from the primary NVM to file stores or from file stores to the primary NVMS. The file stores must be located external to the network element.

The **CPY-NVM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-12. CPY - NVM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>datatype</i>	Type of data that will be copied. Values: ■ DATA ■ SFTWR ■ ALL ALL is not allowed for a copy from SEC to ACTV.
<i>from</i>	Specifies the NVM where the data is being transferred from. Values: ■ ACTV (the active primary NVM) ■ SEC (the secondary NVM) A copy from standby to secondary or vice versa is not allowed.
<i>to</i>	Specifies the NVM where the data is being transferred to. Values: ■ ACTV (the active primary NVM) ■ SEC (the secondary NVM)
<i>restoremode</i>	Restore Mode. Values: ■ ON (that is, enter mcond and restore the database). This value is the default. ■ OFF (that is, the database should not be restored) Only valid for <i>datatype</i> equal to DATA and a copy from secondary to the active primary NVM.

For the active primary NVM to secondary NVM copy:

- For ***datatype*** equal to **DATA**, **CPY-NVM** copies from the current database partition of the active primary NVM to secondary NVM's older database partition.
- For ***datatype*** equal to **SFTWR**, **CPY-NVM** copies from the current software partition of primary NVM to secondary NVM's software partition. The software is unbundled (**APPLY** previously unbundled the download).
- For ***datatype*** equal to **ALL**, software and database are copied from the active primary NVM to secondary.

The system does not have to be initially in MCOND for **CPY-NVM** to execute an active-to-secondary copy.

In addition to a manual backup of the database via the **CPY-NVM** command, the network element can automatically back up the database. Automatic backups go from the active primary NVM to the secondary.

For a secondary NVM to active primary NVM copy:

- The copy is to the active primary NVM.
If mirroring is on, then the standby primary NVM is also updated.
- For ***datatype*** equal to **DATA**, **CPY-NVM** copies from secondary NVM's database partition to the previous database partition of primary NVM. If ***restoremode*** is equal to **ON**, after the copy is complete, the system will be put into MCOND and the database loaded to the RAM, then the system will be removed from MCOND (and the **CPY-NVM** command completes).
- For ***datatype*** equal to **SFTWR**, **CPY-NVM** copies from secondary NVM's software partition to the previous software partition of primary NVM. After the copy is complete, the **APPLY** command should be used to install the generic. **APPLY** will detect whether or not the software requires unbundling and proceed accordingly.
- ***datatype*** may not have the value **ALL**.

Secondary NVM may have two copies of the database. It is the newest version that is used for the source of the copy. The other database copy is used for error recovery, it is not accessible by the user.

The system does not have to be initially in MCOND for **CPY-NVM** to execute a secondary-to-active copy.

For ***datatype*** equal to **SFTWR**, when a generic of state BACKUP is copied to the previous section of NVM, its state will be set to PREVIOUS to imply it has been previously active. To make it active again, **APPLY** must be invoked.

OUTPUT FORMAT

If the network element fully complies with the **CPY-NVM** 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 **CPY-NVM** command.

EXAMPLE INPUT/OUTPUT

The following example copies data and software (the generic) from the active primary NVM to secondary NVM:

```
CPY-NVM:LT-WBM::123456::ACTV,SEC,ALL;
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 apply to the **CPY-NVM** command. The following additional error responses are also applicable.

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 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.

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 condition will cause an SROF error response:

- Unsuccessful file transfer.

RELATED TL1 COMMANDS/MESSAGES

CPY-MEM

RTRV-PRMTR-DATA

RTRV-PRMTR-SFTWR

NAME

DISC-TACC: Disconnect Test Access

The **DISC-TACC** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

1.

INPUT FORMAT

DISC-TACC-*modifier:tid:tatrib1:ctag;*

DESCRIPTION

The **DISC-TACC** command can be initiated by a user to remove the test access connection and terminate the test access session on the test access tributary in the network element.

The port associated with the test tributary can only be DS3.

The **DISC-TACC** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-13. DISC-TACC Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the disconnect test access command is to act on. Values: ■ STS1

Table 3-13. DISC - TACC Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ STS3 ■ STS12 ■ STS48 ■ VC3 ■ VC4 ■ VC44C ■ VC416C
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>tatrib1</i>	Specifies the Primary Test Access Tributary. If this port is not an active Test Access Tributary, the command is denied. Executing the DISC - TACC command will also remove the Secondary Test Access Tributary. See the AID table in OSEG Appendix A. Value: tributary AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

The network element returns the following normal completion response to a successful **DISC - TACC** command if there are no failure conditions to report:

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

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 **DISC - TACC** command by the network element:

```
DISC-TACC-STS1:LT-WBM-789:23-2-#-#-04-7-1:123456;  
  
LT-WBM-789 99-05-07 17:15:08  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **RTRV - HDR** command in the **ERROR RESPONSES** section. The error responses listed there apply to the **DISC - TACC** command.

RELATED TL1 MESSAGES

CONN - TACC

CHG - ACCMD

RTRV - TACC

NAME

DLT - CRS: Delete Cross-Connection

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

- WaveStar BandWidth Manager, Release 1.0

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 3.1, the syntax is:

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

DESCRIPTION

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

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

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

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

INPUT PARAMETERS

Table 3-14. DLT-CRS Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the remove cross-connection command is to act on. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>in_aid</i>	Input Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A).
<i>in_aid2</i>	2nd Input Access Identifier. This parameter is applicable to path-protected cross-connections only. The tributary specified via <i>in_aid</i> is the working leg and the tributary specified by <i>in_aid2</i> is the protection leg. Value: logical tributary AID.
<i>out_aid</i>	Output Access Identifier. Value: logical tributary AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>cct</i>	Cross Connect Topology. Values: ■ 1WAY ■ 2WAY(default).

Table 3-14. DLT-CRS Input Parameters (cont 2 of 2)

Parameter Name	Description
	Starting with Release 3.1, this parameter can also have the value: ■ 1WAYPPROT Starting with Release 3.1, this parameter can also have the value: ■ ADJCTPPROT
<i>appg_aid</i>	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.

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 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

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

```
DLT-CRS-VC3:LT-WBM-789:4-2-#-#-02-1-1,4-2-#-#-06-1-1:123456;  
LT-WBM-789 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 apply to the **DLT-CRS** command.

This 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:

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

This is the **INPUT, Invalid ACcess identifier** error response:

```
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.

RELATED TL1 MESSAGES

ED - CRS

ENT - CRS

RTRV - CRS

NAME

DLT-EQPT: Delete Equipment

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

- 1.

INPUT FORMAT

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

DESCRIPTION

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

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

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

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

A slot's electrical circuit pack cannot be deleted if a crossconnection, reservation, or loopback exists on any port of the circuit pack, or if the circuit pack hasn't been extracted.

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

INPUT PARAMETERS

Table 3-15. DLT -EQPT Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	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
<i>ctag</i>	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 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 apply to the **DLT-EQPT** command.

RELATED TL1 MESSAGES

ED-EQPT

ED-STATE-EQPT

ENT-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

DLT-PROTN-GRP: Delete Protection Group

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

- WaveStar BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

DLT-PROTN-GRP: *tid*: [*aid*]: *ctag*: :*prototype*, [*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 or reservations on any port in the protection group.

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

INPUT PARAMETERS

Table 3-16. DLT-PROTN-GRP Input Parameters (cont 1 of 3)

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

Table 3-16. DLT-PROTN-GRP Input Parameters (cont 2 of 3)

Parameter Name	Description
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. If <i>rid</i> is specified, then <i>aid</i> 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 <i>protype</i> as follows: ■ 1+1: port AID ■ 2F: port AID (starting in Release 2) ■ 4F: port AID (starting in Release 1.2)
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>protype</i>	Protection Type. Values: ■ 1+1 ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.2) ■ EQPTDCC (starting in Release 3.1)
<i>rid</i>	Ring Identification Name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> 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 <i>aid</i> is specified, then <i>rid</i> can be omitted. This parameter is applicable for the following <i>protype</i> values: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.2)

Table 3-16. DLT-PROTN-GRP Input Parameters (cont 3 of 3)

Parameter Name	Description
	Starting in Release 3.0, 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).

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 98-01-01 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:1-1-004:123456::1+1;  
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 apply to the **DLT-PROTN-GRP** command.

RELATED TL1 MESSAGES

ED-PROTN-GRP

ENT-PROTN-GRP

RTRV-PROTN-GRP

NAME

DLT - RSVN: Delete Reservation

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

DLT - RSVN-*modifier*:*tid*:*aid*:*ctag*;

DESCRIPTION

The **DLT - RSVN** command can be initiated by a user to request the network element to remove a reservation in the network element.

The *modifier* in the **DLT - RSVN** command indicates the rate on which the **DLT - RSVN** command is going to act.

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

INPUT PARAMETERS

Table 3-17. DLT - RSVN Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Indicates the rate on which the command is going to act. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2)

Table 3-17. DLT - RSVN Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A).
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **DLT - RSVN** 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-RSVN** command by the network element:

```
DLT-RSVN-STS1:LT-WBM-789:1-1-#-#-2-2-1:123456;  
  
LT-WBM-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

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

```
DLT-RSVN-VC3:LT-WBM-789:1-1-#-#-2-2-1:123456;  
  
LT-WBM-789 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 apply to the **DLT-RSVN** command.

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.

RELATED TL1 MESSAGES

ED-RSVN

ENT-RSVN

RTRV - RSVN

NAME

DLT-TCA-PROF: Delete TCA Profile

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

- WaveStar BandWidth Manager, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

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

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

INPUT PARAMETERS

Table 3-18. DLT-TCA-PROF Input Parameters (cont 1 of 2)

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

Table 3-18. DLT - TCA - PROF Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>pftype</i>	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ PHYSICAL ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC
<i>pfname</i>	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 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 apply to the **DLT-TCA-PROF** command.

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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

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

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

INPUT PARAMETERS

Table 3-19. DLT-ULSDCC-L4 Input Parameters (cont 1 of 2)

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

Table 3-19. DLT - ULSDCC - L4 Input Parameters (cont 2 of 2)

Parameter Name	Description
	If an EQPTDCC protection group exists, the AID of the second DCC circuit pack is an alias for the first DCC circuit pack. There is only one OSI stack for both packs; so, the AID of either circuit pack can be used to provision the parameters. But the REPT DBCHG message and the RTRV - ULSDCC - L4 command will use only the AID of the first DCC circuit pack. It is, therefore, recommended that operations systems only use the AID of the first DCC circuit pack.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	<i>l4ajsys</i> This parameter is available starting in Release 1. This parameter specifies the System ID field of the NSAP address of a network element to be deleted from the TARP Manual Adjacency list of the target NE (i.e., the NE indicated by the <i>tid</i> 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 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 apply to the **DLT-ULSDCC-L4** command.

RELATED TL1 MESSAGES

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

ENT-ULSDCC-L3

ENT-ULSDCC-L4

NAME

DLT-USER-SECU: Delete User Security

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

- 1.

INPUT FORMAT

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

DESCRIPTION

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

The network element shall always have two preinstalled users with full privileges in all functional categories. These two users will be referred to as Administrators (or Superusers). The network element will allow neither adding additional administrator type users (i.e., adding a user with S5 user privilege code) nor modify the existing login IDs of the two administrators. 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 3-20. DLT - USER - SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	User Identifier. Valid values are a case-sensitive alphanumeric string of 1 to 10 characters. Only a single <i>uid</i> is supported in the command. Refer to the ACT - USER command.
<i>ctag</i>	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:kj lee:123456;  
LT-WBM-789 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 apply to the **DLT-USER-SECU** command.

RELATED TL1 COMMANDS

ENT-USER-SECU

ED-USER-SECU

RTRV-USER-SECU

NAME

ED-ASAP-PROF: Edit Alarm Severity Assignment Profile

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

- WaveStar BandWidth Manager, Release 1.2

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 3-21. ED-ASAP-PROF Input Parameters (cont 1 of 8)

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

Table 3-21. ED-ASAP-PROF Input Parameters (cont 2 of 8)

Parameter Name	Description
<i>pftype</i>	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 3.1). ■ DS3IN DS3 Port (input) ■ DS3OUT DS3 Port (output), connected to a SONET port ■ DS3OUTSDH DS3 Port (output), connected to an SDH port ■ EQPT Equipment ■ SDH STM-N Port ■ SONET OC-N/EC1 Port ■ SYS System Events ■ TIMING System Timing ■ TRIBSDH VC-N tributary ■ TRIBSONET STS-N(c) SONET tributary
<i>pfname</i>	Profile Name. This parameter indicates the name of the ASAP profile. Value: See the ENT-ASAP-PROF command for the values of this parameter.
<i>spec_block</i>	The <i>spec_block</i> and the parameters within it are all optional. Parameters within the <i>spec_block</i> are specified using a name-defined construct of: <i>keyword=value</i> in a comma separated list. The allowable values for <i>keyword</i> are given below. For a particular ED-ASAP-PROF command, only those <i>keyword</i> parameters that correspond to the profile type <i>pftype</i> shall be used. If a parameter is not specified as part of the <i>spec_block</i>, then its value remains unchanged. The values that are applicable to a specific parameter are indicated by foot notes at the end of this table. For example, <i>psbyte</i> has a foot note which indicates the allowable parameter values are: CR, MJ, MN, NA, and NR.

Table 3-21. ED-ASAP-PROF Input Parameters (cont 3 of 8)

Parameter Name	Description			
	The column identified below as Initial indicates the parameter's value when the profile is created by the ENT-ASAP-PROF command. This corresponds to the value the parameter has in the profile named "Default."			
<i>pftype</i>	Keyword	Description	Value	Initial
Any Type	<i>newname</i>	Starting in Release 1.3, the <i>newname</i> parameter is used to change the name of a profile. The profile that will have its name changed is identified by the input parameters <i>pftype</i> , <i>pfname</i> . Specifying a value for the <i>newname</i> parameter causes <i>pfname</i> = <i>newname</i> . The name of the default profile cannot be changed.	#	
APS	<i>fop</i>	APS Failure of Protocol (starting in Release 1.3) This APS parameter applies to 1+1 optical protection groups. All other APS parameters apply only to 1xNOPT.	*	MJ
BLSR	<i>blsrinaps</i>	BLSR Inconsistent APS Codes	*	MJ
	<i>blsrimaps</i>	BLSR Improper APS Codes	*	MJ
	<i>blsrdkb</i>	BLSR Default K-bytes	*	MJ
	<i>blsrts</i>	BLSR Traffic Squelched	*	MJ
	<i>rsmc</i>	Local Squelch Map Conflict	*	MN
	<i>rinc</i>	Ring Incomplete	*	MJ
	<i>ropn</i>	Ring Open	*	MJ
	<i>nidm</i>	Node ID Mismatch	*	MJ
	<i>dprn</i>	Duplicate Ring Node	*	MJ
	<i>urt</i>	Unknown Ring Type (starting in Release 1.3)	*	NA

Table 3-21. ED-ASAP-PROF Input Parameters (cont 4 of 8)

Parameter Name	Description			
	<i>irpm</i>	Inconsistent Ring Prot Mode (starting in Release 1.3)	*	MJ
	<i>rdip</i>	Ring Discovery in Progress	*	NA
	<i>rsip</i>	Ring Startup in Progress	*	MJ
	<i>etp</i>	Extra Traffic Preempted	*	NA
	<i>rpss</i>	Ring Prot Switching Suspended (starting in Release 2)	*	MJ
DRIPATH	<i>psact</i>	Path Switch Active	*	MN
DS3IN	<i>sa_ds3los</i> <i>nsa_ds3los</i>	service / non-service affecting DS3 Loss of Signal	*	CR MN
	<i>sa_ds3lof</i> <i>nsa_ds3lof</i>	DS3 Loss of Frame	*	CR MN
	<i>sa_ds3ais</i> <i>nsa_ds3ais</i>	Alarm Indication Signal - DS3	*	CR NR
	<i>sa_ds3ber</i> <i>nsa_ds3ber</i>	DS3 Bit Error	*	MJ MN
	<i>sa_ds3idle</i> <i>nsa_ds3idle</i>	DS3 Idle Signal	*	CR MN
		Starting in Release 3.1, the initial value of <i>nsa_ds3idle</i> is NR		NR
DS3OUT	<i>ais</i>	Alarm Indication Signal - Path	*	CR
	<i>rfi</i>	Remote Failure Indication - Path	*	NR
	<i>uneq</i>	STS Path Unequip	*	CR
	<i>plm</i>	STS Payload Label Mismatch	*	CR
DS3OUTSDH	<i>hpf_ssf</i>	HP Server Signal Failure	*	CR
	<i>hpf_rdi</i>	HP Remote Defect Indication	*	CR

Table 3-21. ED-ASAP-PROF Input Parameters (cont 5 of 8)

Parameter Name	Description			
	<i>hpf_uneq</i>	HP Unequip	*	CR
EQPT	<i>sa_cpfail</i> <i>nsa_cpfail</i>	service / non-service affecting Circuit Pack Failure	*	CR MN
	<i>sa_cpuneq</i> <i>nsa_cpuneq</i>	Circuit Pack Unequipped/Missing	*	CR MN
	<i>sa_mcpuneq</i> <i>nsa_mcpuneq</i>	Mate Circuit Pack Unequipped (starting in Release 2)	*	MN MN
	<i>sa_cpinv</i> <i>nsa_cpinv</i>	Circuit Pack Invalid	*	MN MN
	<i>sa_nvmmw</i> <i>nsa_nvmmw</i>	Non-Volatile Memory Wearout	*	MN MN
	<i>sa_fan</i> <i>nsa_fan</i>	Fan Failure	*	CR MN
	<i>sa_fuse</i> <i>nsa_fuse</i>	Power/Fuse Failure	*	CR MN
	<i>sa_rsrcusg</i> <i>nsa_rsrcusg</i>	Resource Usage (starting in Release 1.3)	*	MJ MN
	<i>sa_mmis</i> <i>nsa_mmis</i>	Memory Mismatch (starting in Release 1.3)	*	MJ MN
	<i>sa_nvumusg</i> <i>nsa_nvumusg</i>	Non-Volatile Memory Usage (starting in Release 1.3)	*	MJ MN
SDH	<i>sa_stmf_los</i> <i>nsa_stmf_los</i>	service affecting STM Loss of Signal non service affecting STM Loss of Signal	*	CR MN
	<i>sa_rsf_lof</i> <i>nsa_rsf_lof</i>	STM Loss of Frame	*	CR MN
	<i>sa_msf_ais</i> <i>nsa_msf_ais</i>	MSeCT Alarm Indication Signal	*	NR NR
	<i>sa_msf_rdi</i> <i>nsa_msf_rdi</i>	MSeCT Remote Failure Indication	*	NR NR

Table 3-21. ED-ASAP-PROF Input Parameters (cont 6 of 8)

Parameter Name	Description			
	<i>sa_msf_exc</i> <i>nsa_msf_exc</i>	MSeCT Excessive Error	*	CR MN
	<i>sa_msf_deg</i> <i>nsa_msf_deg</i>	MSeCT Signal Degrade	*	MJ MN
	<i>sa_msf_ssf</i> <i>nsa_msf_ssf</i>	MSeCT Server Signal Failure	*	NA NA
	<i>sa_dccrs</i> <i>nsa_dccrs</i>	DCC RSeCT Failure	*	MN MN
	<i>sa_dccms</i> <i>nsa_dccms</i>	DCC MSeCT Failure (starting in Release 1.3)	*	MN MN
	<i>sa_lidrsmm</i> <i>nsa_lidrsmm</i>	LinkID RSeCT Mismatch	*	MN MN
	<i>sa_lidmsmm</i> <i>nsa_lidmsmm</i>	LinkID MSeCT Mismatch (starting in Release 1.3)	*	MN MN
	<i>sa_unsrs</i> <i>nsa_unsrs</i>	User-Network Side RSeCT Failure	*	MN MN
	<i>sa_unsms</i> <i>nsa_unsms</i>	User-Network Side MSeCT Failure (starting in Release 1.3)	*	MN MN
	<i>sa_dccrsdu</i> <i>nsa_dccrsdu</i>	DCC RSeCT Disabled-Unavailable The parameters <i>sa_dccrsdu</i> and <i>nsa_dccrsdu</i> are replaced in Release 2 by <i>dccrsdu</i> , SYS ASAP.	*	NA NA
	<i>sa_dccmsdu</i> <i>nsa_dccmsdu</i>	DCC MSeCT Disabled-Unavailable The parameters <i>sa_dccmsdu</i> and <i>nsa_dccmsdu</i> are replaced in Release 2 by <i>dccmsdu</i> , SYS ASAP.	*	NA NA
SONET	<i>sa_los</i> <i>nsa_los</i>	service affecting Loss of Signal non service affecting Loss of Signal	*	CR MN
	<i>sa_lof</i> <i>nsa_lof</i>	Loss of Frame	*	CR MN

Table 3-21. ED-ASAP-PROF Input Parameters (cont 7 of 8)

Parameter Name	Description			
	<i>sa_aisl</i> <i>nsa_aisl</i>	Alarm Indication Signal - Line	*	NR NR
	<i>sa_rfil</i> <i>nsa_rfil</i>	Remote Failure Indication	*	NR NR
	<i>sa_eber</i> <i>nsa_eber</i>	Excessive Error	*	CR MN
	<i>sa_ber</i> <i>nsa_ber</i>	Bit Error/Signal Degrade	*	MJ MN
	<i>sa_dccsect</i> <i>nsa_dccsect</i>	DCC Sect Failure	*	MN MN
	<i>sa_dccline</i> <i>nsa_dccline</i>	DCC Line Failure (starting in Release 3.1)	*	MN MN
	<i>sa_lidsectmm</i> <i>nsa_lidsectmm</i>	LinkID Sect Mismatch	*	MN MN
	<i>sa_lidlinemm</i> <i>nsa_lidlinemm</i>	LinkID Line Mismatch (starting in Release 1.3)	*	MN MN
	<i>sa_unssect</i> <i>nsa_unssect</i>	User-Network Side Sect Failure	*	MN MN
	<i>sa_unsline</i> <i>nsa_unsline</i>	User-Network Side Line Failure (starting in Release 1.3)	*	MN MN
SYS	<i>arst</i>	Autonomous Reset	**	NA
	<i>swerr</i>	Software Error	**	NA
	<i>omerr</i>	Out of Memory Error	**	NA
	<i>ferr</i>	File Error	**	NA
	<i>adbf</i>	Auto Database Backup Failure	**	NA
	<i>almtst</i>	Alarm Test	**	NR
	<i>dccrsdu</i>	DCC RSect Disabled-Unavailable (starting in Release 2)	**	NA
	<i>dccsectdu</i>	DCC Sect Disabled-Unavailable (starting in Release 2)	**	NA
	<i>dcclinedu</i>	DCC Line Disabled-Unavailable (starting in Release 2)	**	NA

Table 3-21. ED-ASAP-PROF Input Parameters (cont 8 of 8)

Parameter Name	Description			
TIMING	<i>dcctypm</i>	DCC Type Mismatch (starting in Release 2)	**	NR
	<i>syncref</i>	Sync Reference Failure (external reference)	*	MJ
	<i>holdover</i>	System Clock Holdover	*	MN
	<i>linesync</i>	Line Sync Reference Failure (starting in Release 2)	*	NR
TRIBSDH	<i>sa_auf_lop</i> <i>nsa_auf_lop</i>	sa AU Loss of Pointer nsa AU Loss of Pointer	*	CR NR
	<i>sa_auf_ais</i> <i>nsa_auf_ais</i>	AU Alarm Indication Signal	*	NR NR
	<i>sa_hpf_rdi</i> <i>nsa_hpf_rdi</i>	HP Remote Defect Indication	*	NR NR
	<i>sa_hpf_uneq</i> <i>nsa_hpf_uneq</i>	HP Unequip	*	CR NR
	<i>sa_hpf_exc</i> <i>nsa_hpf_exc</i>	HP Excessive Error	*	NR NR
	<i>sa_hpf_deg</i> <i>nsa_hpf_deg</i>	HP Signal Degrade	*	NR NR
TRIBSONET	<i>sa_lop</i> <i>nsa_lop</i>	sa Loss of Pointer nsa Loss of Pointer	*	CR MN
	<i>sa_ais</i> <i>nsa_ais</i>	Alarm Indication Signal - Path	*	NR NR
	<i>sa_uneq</i> <i>nsa_uneq</i>	STS Path Unequip	*	CR NR
	<i>sa_pdi</i> <i>nsa_pdi</i>	STS Payload Defect Indicator	*	NR NR
	<i>sa_eber</i> <i>nsa_eber</i>	Excessive Error - Path	*	NR NR
	<i>sa_ber</i> <i>nsa_ber</i>	Bit Error/Signal Degrade - Path	*	NR NR

- * Allowable parameter values are: **CR**, **MJ**, **MN**, **NA**, and **NR**.
- ** A transient alarm (not a standing condition). The allowable parameters are **NA** and **NR**.
- # Alphanumeric character string with a maximum of 24 characters.

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

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

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_lo=MJ,sa_lof=MJ,sa_eber=MJ;
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 **ED-ASAP-PROF** command. The following additional error response(s) are applicable:

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.

RELATED TL1 MESSAGES

ENT-ASAP-PROF

RTRV-ASAP-PROF

NAME

ED - CRS: Edit Cross-Connection

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

- WaveStar BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

Starting with Release 1.2, 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 3-22. ED - CRS Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the edit cross-connection command is to act on. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2)

Table 3-22. ED-CRS Input Parameters (cont 2 of 3)

Parameter Name	Description
	■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>in_aid</i>	Input Access Identifier. See the AID table in OSEG Appendix A. Value: logical tributary AID.
<i>out_aid</i>	Output Access Identifier. See the AID table in OSEG Appendix A. Value: logical tributary AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	
	<i>loca</i> Specifies the new source <i>tid</i> associated with <i>in_aid</i>. This parameter is applicable to BLSR connections only. If the value is omitted, the current value is not modified. Values: See <i>tid</i> in the RTRV-HDR command Starting in Release 3.0, 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). <i>locz</i> Specifies the new destination <i>tid</i> associated with <i>out_aid</i>. This parameter is applicable to BLSR connections only. Values: see <i>loca</i>

Table 3-22. ED-CRS Input Parameters (cont 3 of 3)

Parameter Name	Description
	<i>omode</i> OMODE. Specifies the new output mode. Values: ■ NORM ■ IDLE/UNEQ ■ AIS If the value is omitted, the current value is not modified. <u>Note:</u> Output mode IDLE is for DS3 tributaries and UNEQ is for tributaries from SONET/SDH interfaces. <i>xcappl</i> Application indicates one of the applications that are supported by compound cross-connection topologies. Values: 0-255 <i>xcnum</i> 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 98-01-01 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 and circuit audit values 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=
UNEQ;

LT-WBM-789 98-01-01 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 destination *tid* values of an existing VC3 BLSR cross-connection:

```
ED-CRS-VC3:LT-WBM-789:4-2-#-#-02-2-1,4-2-#-#-09-1-7:123456:::LOCZ=LT-
WBM-456;

LT-WBM-789 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 apply to the **ED-CRS** command. The following additional error responses are also applicable.

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.

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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

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

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

INPUT PARAMETERS

Table 3-23. ED-DAT Input Parameters (cont 1 of 2)

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

Table 3-23. ED-DAT Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>time</i>	The time specifies the current time of day as HH-MM-SS. Values: {00-23}-{00-59}-{00-59}. If the parameter <i>date</i> is not specified, the current value is not changed, but <i>time</i> 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-EQPT: Edit Equipment

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

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

Beginning with Release 3.0, 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 3-24. ED-EQPT Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. This parameter is the address of the equipment component to be modified. Value:

Table 3-24. ED-EQPT Input Parameters (cont 2 of 3)

Parameter Name	Description
	■ System AID ■ Shelf AID ■ Slot AID. The “all” keyword is allowed. ■ Circuit pack AID. The “all” keyword is allowed.
ctag	Correlation Tag. Refer to RTRV - HDR command for the input parameter syntax and description of this parameter.
name	Circuit Pack Name. This parameter is available starting in Release 1. Value: 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 1. Value: 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	Unless otherwise stated, if a spec_block parameter is omitted, its value is not changed. swnsize This parameter is available starting in Release 1.2. System Switch Size. This parameter is only allowed with a system AID. This parameter is only set when the system is first brought into service. The system must be in MCOND to set this parameter. Once this parameter has a value, it cannot be changed because, once the switch fabric size (configuration) is set up, it cannot be dynamically changed while maintaining existing cross-connects. If this parameter is misprovisioned, the only recourse is to download a new database that contains the swnsize parameter not set. Values: ■ 1152 ■ 4608 ■ 9216.

Table 3-24. ED-EQPT Input Parameters (cont 3 of 3)

Parameter Name	Description
	<i>bswport</i> BSW Port Identifier. This parameter is available starting in Release 1. This parameter is only allowed with a SWIF circuit pack AID, but it must not be the first SWIF pair. If the <i>aid</i> is a SWIF circuit pack AID, this parameter is required. Values: 1-12 (for 1152 switches) or 1-48 (for 4608 switches). <i>istddflt</i> This parameter is available starting in Release 1.2. Interface Standard 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 <i>istd</i> 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: ■ SONET ■ SDH. <i>syncrtc</i> System Synchronization Characteristic. This parameter is available starting in Release 3.1. This parameter is only allowed with a system AID. This parameter must be set when the system is in MCOND state. Values: ■ SONET ■ SDH.

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:::swnsize=1152;  
LT-WBM 98-01-01 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.

RELATED TL1 MESSAGES

DLT-EQPT

ED-STATE-EQPT

ENT-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ED-NE: Edit network element

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

- WaveStar BandWidth Manager, Release 1.1

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 3-25. ED-NE Input Parameters (cont 1 of 2)

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

Table 3-25. ED-NE Input Parameters (cont 2 of 2)

Parameter Name	Description
	<i>elapstm</i> This parameter is available starting in Release 1.3. Elapsed Time for Automatic Database Update. Values: an integer followed by a letter, signifying the units. For example, 24H means 24 hours. The letter is one of: ■ H Hours ■ D Days ■ W Weeks ■ M Months. If the letter is omitted, it implies hours. The range of the integer is one of: ■ 1-24 hours ■ 1-30 days ■ 1-52 weeks ■ 1-12 months. The initial value is 24 hours. If the integer is omitted, the current value is not modified. In releases prior to 3.1, the value is: Values: 1-24 (hours). The initial value is 24. <i>duara</i> This parameter is available starting in Release 1.1. Directory User Agent and Registration Agent. Values: ■ ENABLE (initial value) ■ DISABLE. If the parameter is omitted, the current value is not modified.

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 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

ERROR RESPONSES

Refer to the **ERROR RESPONSES** section of the **RTRV-HDR** command. The requirements listed there also apply to the **ED-NE** command.

RELATED TL1 MESSAGES

RTRV-NE

NAME

ED-NE-SECU: Edit network element Security

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

COMMAND PRIORITY

1.

INPUT FORMAT

Beginning in Release 1.0, the syntax is:

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

Beginning in Release 1.3, 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 3-26. ED-NE-SECU Input Parameters (cont 1 of 2)

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

Table 3-26. ED-NE-SECU Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	<i>thrshld</i> Lockout Threshold. The maximum number of consecutive invalid login attempts that are allowed by a <i>uid</i>. If the count of invalid login attempts is equal to the threshold, the <i>uid</i> is locked out for <i>intrvl</i> period of time. If a login attempt is successful, the count of invalid login attempts by that <i>uid</i> is reset to zero. If the parameter is not specified, it retains its current value. The initial value is 5. Values: 2-99 <i>intrvl</i> Lockout Period. This parameter is available starting in Release 1. The time during which login attempts using that <i>uid</i> will not be allowed. This occurs when the number of consecutive invalid login attempts by a <i>uid</i> reaches <i>thrshld</i>. When <i>intrvl</i> expires, login attempts will again be allowed from that <i>uid</i>. 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 <i>usrage</i> User ID Aging Period. This parameter is available beginning in Release 3.1. If a <i>uid</i> has not been used during this time interval, it will be disabled. User ID aging does not apply to the superuser logins. Value (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 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 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

ED-PID: *tid::ctag::old_pid, new_pid;*

DESCRIPTION

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

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

- The user is currently logged in on the network element.
- The *old_pid* provided matches the current password for that login identifier.
- The *new_pid* provided satisfies the password requirements of the network element.

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

INPUT PARAMETERS

Table 3-27. ED-PID Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for input parameter syntax and description of this parameter.
<i>old_pid</i>	Old Password Identifier. This is the current <i>pid</i> of the user. Refer to the ACT-USER command.
<i>new_pid</i>	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 <i>new_pid</i> value must differ from the <i>old_pid</i> 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.
  */
;
```

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 98-01-01 08:00:00  
M 123456 COMPLD  
"mvdln5:97-12-31,09-00-00,1,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-GRP: Edit Protection Group

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

- 1.

INPUT FORMAT

ED-PROTN-GRP: *tid*: [*aid*]: *ctag*: : *prototype*, [*rid*]: *spec_block*;

Starting in Release 3.1, **ED-PROTN-GRP** has the following input format:

ED-PROTN-GRP: *tid*: [*aid*]: *ctag*: : *prototype*, [*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 3-28. ED - PROTN - GRP Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. If <i>rid</i> is specified, then <i>aid</i> can be omitted. For each protection group type, <i>aid</i> can be a protection group AID. See <i>protype</i> for a list of the protection group types. For some protection groups, <i>aid</i> is not constrained to be a protection group AID. In this case, the protection group associated with the AID will be accessed. Non protection group AIDs can be specified for the following types: ■ 1+1: port AID (starting in Release 1.2) ■ 2F: port AID (starting in Release 2) ■ 4F: port AID (starting in Release 1.1) ■ PATHDRI: input tributary AID (starting in Release 3.1). Input tributary AID is only allowed if a <i>ppgname</i> is supplied as well. But AID is optional if <i>ppgname</i> is supplied.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ppgname</i>	Path protection group name (Starting in Release 3.1)

Table 3-28. ED-PROTN-GRP Input Parameters (cont 2 of 3)

Parameter Name	Description
	This parameter can only be specified for path protection groups. If prototype 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. 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.
prototype	Protection Type. Values: ■ 1+1 (starting in Release 1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1) ■ PATHDRI (starting in Release 3.1) ■ 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 prototype values: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)
	Starting in Release 3.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).

Table 3-28. ED-PROTN-GRP Input Parameters (cont 3 of 3)

Parameter Name	Description
<i>spec_block</i>	See the following “ED-PROTN-GRP <i>spec_block</i> Parameters” table.

Table 3-29. ED-PROTN-GRP *spec_block* Parameters (cont 1 of 4)

Parameter	Description/PROTYPE	Value
<i>dcclm-sprotmd</i>	DCC line/MS protection mode. Starting in Release 3.1, this parameter is applicable to the following <i>prototypes</i> : ■ 1+1 (starting in Release 3.1)	DISABLE is the initial value. ENABLE, DISABLE
<i>dccsr-sprotmd</i>	DCC Sect/RS protection mode. Starting in Release 3.1, this parameter is applicable to the following <i>prototypes</i> : ■ 1+1 (starting in Release 3.1)	DISABLE is the initial value. ENABLE, DISABLE
<i>eastprotn</i>	East Protection Group Member. This parameter is applicable to the following <i>prototypes</i> : ■ 4F (starting in Release 1.2)	port AID
<i>eastwkg</i>	East Working Group Member. This parameter can be used to change from 4-port mode to 2-port mode or vice versa. 4-port mode is obtained by specifying <i>eastwkg</i> , <i>eastprotn</i> , <i>westwkg</i> , <i>westprotn</i> . 2-port mode is obtained by specifying <i>eastwkg</i> , <i>eastprotn</i> or <i>westwkg</i> , <i>westprotn</i> . The modified group inherits the parameter values such as <i>wtr</i> unless new parameters are specifically assigned by this command. This parameter is applicable to the following <i>prototypes</i> : ■ 4F (starting in Release 1.2)	port AID
<i>hte</i>	Holdoff Timer Enable. This parameter is applicable to the following <i>prototypes</i> :	The initial value is determined by the value of <i>ppbv</i> as set via ENT - CRS .

Table 3-29. ED-PROTN-GRP *spec_block* Parameters (cont 2 of 4)

Parameter	Description/PROTYPE	Value
	■ PATHDRI (starting in Release 3.1)	ENABLE, DISABLE
<i>newppg-name</i>	Path Protection Group Identification Name (starting in Release 3.1). The value assigned to <i>newppgname</i> 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 <i>newppgname</i> is assigned is specified by <i>aid</i>, <i>ppgname</i>. This parameter is applicable to the following <i>prototypes</i>: ■ 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 3072 for BWM 9216 and 1536 for BWM 4608	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.
<i>newrid</i>	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 <i>newrid</i> replaces the protection group's previous ring ID. The protection group to which <i>newrid</i> is assigned is the protection group specified by either <i>aid</i> or <i>rid</i>. This parameter is applicable to the following <i>prototypes</i>: ■ 2F (starting in Release 2)	If the value is omitted, the current value is not modified. ASCII string of up to 15 characters from the TID character set

Table 3-29. ED-PROTN-GRP *spec_block* Parameters (cont 3 of 4)

Parameter	Description/PROTYPE	Value
	■ 4F (starting in Release 1.1) Starting in Release 3.0	ASCII string of up to 15 characters from the TID character set 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).
<i>prot-nmode</i>	Protection Switch Mode: This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1.2)	LOOPBACK is the initial value. LOOPBACK, SHORTENED
<i>rme</i>	Revertive Mode Enable. ■ PATHDRI (starting in Release 3.1)	ENABLE, DISABLE The initial value is determined by the value of <i>ppbv</i> as set via ENT - CRS.
<i>swtr</i>	Span Wait to Restore. This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1.1)	5 is the initial value. 0-12 and 99 (which represents infinity). The units of <i>swtr</i> are minutes.
<i>westprotn</i>	West Protection Group Member	See <i>eastprotn</i> .
<i>westwkg</i>	West Working Group Member	See <i>eastwkg</i> .
<i>wtr</i>	Wait to Restore. This parameter is applicable to the following prototypes: ■ 1xNELEC ■ 1+1	5 is the initial value. 0-12 and 99 (which represents infinity). The units of <i>wtr</i> are minutes. 0-12 and 99 (which represents infinity). The units of <i>wtr</i> are minutes.

Table 3-29. ED-PROTN-GRP *spec_block* Parameters (cont 4 of 4)

Parameter	Description/PROTYPE	Value
	■ 2F (starting in Release 2)	0-12 and 99.
	■ 4F (starting in Release 1.1)	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 98-01-01 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 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 apply to the **ENT-PROTN-GRP** command.

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 BandWidth Manager, Release 3.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

ED-PROTN-TYPE: *tid::ctag::prototype: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 3-30. ED-PROTN-TYPE Input Parameters

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

Table 3-30. ED-PROTN-TYPE Input Parameters

Parameter Name	Description
<i>prototype</i>	This parameter Protection Type. Value: ■ PATHDRI
<i>spec_block</i>	<i>plwtr</i> path level wait-to-restore. This parameter is only applicable when <i>prototype</i> is PATHDRI . Values: 0-12 and 99 (which represents infinity). If the value is omitted, then the current value is not modified. The dimensions of <i>plwtr</i> are minutes.
	<i>plhtmr</i> Path level holdoff timer This parameter is only applicable when <i>prototype</i> 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 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 apply to the **ED-PROTN-TYPE** command.

RELATED TL1 MESSAGES

ED-PROTN-GRP

DLT-PROTN-GRP

RTRV-PROTN-GRP

RTRV-PROTN-TYPE

OPR-PROTNSW

RLS-PROTNSW

NAME

ED-rr: Edit rr

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

Table 3-31. Syntax of **ED-rr**

Command Syntax
ED-EC1: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 2)
ED-OC3: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1.2)
ED-OC12: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1.1)
ED-OC48: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1)
ED-OC192: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 2)
ED-STM1: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1.2)
ED-STM1E: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 3.1)
ED-STM4: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1.3)
ED-STM16: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1.2)
ED-STM64: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 2)
ED-STS1: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1)
ED-T3: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1.3)
ED-VC3: <i>tid:aid:ctag:::spec_block;</i> (starting in Release 1.2)

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-SYCN**.

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.

Table 3-32. ED-OCn Input Parameters (cont 1 of 7)

rr	Parameter Name	Description
	<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.
EC1	<i>aid</i>	Access Identifier (starting in Release 2) 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	<i>aid</i>	See OC48 (starting in Release 1.2).
OC12	<i>aid</i>	See OC48 (starting in Release 1.1).
OC48	<i>aid</i>	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	<i>aid</i>	See OC48 (starting in Release 2).
	<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.

Table 3-32. ED-OCn Input Parameters (cont 2 of 7)

rr	Parameter Name	Description
	<i>spec_block</i>	The following are the <i>spec_block</i> parameters.
EC1		<i>EIF</i> 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		<i>emi</i> See OC48 (starting in Release 2).
OC3		<i>emi</i> See OC48 (starting in Release 1.2).
OC12		<i>emi</i> See OC48 (starting in Release 1.1).
OC48		<i>emi</i> EBER ignored for AIS insertion. This parameter controls the contribution of EBER to AIS insertion. If <i>emi</i> 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		<i>emi</i> See OC48 (starting in Release 2).
OC192		<i>fec</i> FEC Mode Enable (starting in Release 2). Activates Forward Error Correction processing in a service affecting way. See also, <i>feccor</i>. Values: ■ ENABLE (initial value) ■ DISABLE.

Table 3-32. ED-OCn Input Parameters (cont 3 of 7)

rr	Parameter Name	Description
OC192		feccor FEC Correction Enable (starting in Release 2). Turns on correction processing (non-service affecting) once <i>fec</i> has been enabled. Has no affect if <i>fec</i> has not been enabled. Values: ■ ENABLE (initial value) ■ DISABLE.
OC192		fectype FEC Type (starting in Release 3) Values: ■ INBAND (initial value) ■ OUTBAND.
EC1		felpm See OC48 (starting in Release 2).
OC3		felpm See OC48 (starting in Release 1.3).
OC12		felpm See OC48 (starting in Release 1.3).
OC48		felpm Far End Line PM Enable (starting in Release 1.3). This enables/disables the far end line parameters performance monitoring. Values: ■ ENABLE ■ DISABLE (initial value).
OC192		felpm See OC48 (starting in Release 2).
OC3		inputsig See OC48 (starting in Release 1.2).
OC12		inputsig See OC48 (starting in Release 1.2).
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 STS1's, 1 STS3C, 1 STS12C, 24 STS1's. If trbmd is FIXED, then inputsig constrains the cross connection rates that can be entered for the port. If trbmd is ADAPTIVE, then input inputsig has no effect.

Table 3-32. ED-OCn Input Parameters (cont 4 of 7)

rr	Parameter Name	Description
		Starting in Release 3, 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 <i>istd</i> parameter is changed, then <i>inputsig</i> will automatically reset to its initial value.
OC192		<i>inputsig</i> See OC48 (starting in Release 2).
OC3		<i>istd</i> See OC48 (starting in Release 1.2).
OC12		<i>istd</i> See OC48 (starting in Release 1.2).
OC48		<i>istd</i> Interface Standard (starting in Release 1.2). The initial value is set with the <i>istddflt</i> parameter in the ED-EQPT command. Values: ■ SONET ■ SDH. To change an SDH port to SONET, use ED-STMn. To change a SONET port to SDH, use ED-OCn. The command will be DENY'd if these rules are not followed. The pairs of commands are: (ED-OC3, ED-STM1), (ED-OC12, ED-STM4), (ED-OC48, ED-STM16), (ED-OC192, ED-STM64).
OC192		<i>istd</i> See OC48 (starting in Release 2).
OC48		<i>phypm</i> Physical PM Enable (starting in Release 1.3). This enables/disables the physical parameters performance monitoring. Values: ■ ENABLE (initial value) ■ DISABLE.
OC192		<i>phypm</i> See OC48 (starting in Release 2).

Table 3-32. ED-OCn Input Parameters (cont 5 of 7)

rr	Parameter Name	Description
OC48		phytca Physical TCA (starting in Release 2). 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).
OC192		phytca See OC48 (starting in Release 2).
EC1		pmode See OC48 (starting in Release 2).
OC3		pmode See OC48 (starting in Release 1.2).
OC12		pmode See OC48 (starting in Release 1.1).
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 2).
EC1		sdthr See OC48 (starting in Release 2).
OC3		sdthr See OC48 (starting in Release 1.2).
OC12		sdthr See OC48 (starting in Release 1.1).
OC48		sdthr Signal Degrade Threshold. This sets the BER threshold for the optical signal. Values (as exponents of 10): ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9.

Table 3-32. ED-OCn Input Parameters (cont 6 of 7)

rr	Parameter Name	Description
OC192		sdthr See OC48 (starting in Release 2).
EC1		sfthr See OC48 (starting in Release 2).
OC3		sfthr See OC48 (starting in Release 1.2).
OC12		sfthr See OC48 (starting in Release 1.1).
OC48		sfthr Signal Failure Threshold. This sets the excessive BER threshold for the optical signal. Values (as exponents of 10): ■ -3 (initial value 10⁻³) ■ -4 ■ -5.
OC192		sfthr See OC48 (starting in Release 2).
EC1		sltca See OC48 (starting in Release 2).
OC3		sltca See OC48 (starting in Release 2).
OC12		sltca See OC48 (starting in Release 2).
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).
OC192		sltca See OC48 (starting in Release 2).
EC1		snelpm Section and Near End Line PM Enable (starting in Release 2). This enables/disables the section and near end line parameters performance monitoring. Values: ■ ENABLE (initial value) ■ DISABLE.
OC3		snelpm See OC48 (starting in Release 1.3).
OC12		snelpm See OC48 (starting in Release 1.3).

Table 3-32. ED-OCn Input Parameters (cont 7 of 7)

rr	Parameter Name	Description
OC48		snelpm Section and Near End Line PM Enable (starting in Release 1.3). This enables/disables the section and near end line parameters performance monitoring. Values: ■ ENABLE (initial value) ■ DISABLE.
OC192		snelpm See OC48 (starting in Release 2).
EC1		sonet See OC48 (starting in Release 2).
OC3		sonet See OC48 (starting in Release 1.3).
OC12		sonet See OC48 (starting in Release 1.3).
OC48		sonet SONET Alarm Severity Assignment Profile (starting in Release 1.3). 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).
OC192		sonet See OC48 (starting in Release 2).
OC3		unequiposig See OC48 (starting in Release 1.2).
OC12		unequiposig See OC48 (starting in Release 1.2).
OC48		unequiposig Tributary Unequipped Output Signal Rate List (starting in Release 1.2). 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		unequiposig See OC48 (starting in Release 2).

The table that follows describes the input parameters for **ED-STMn**. If the **rr** field is blank, then the row applies to all **ED-rr** commands.

Table 3-33. ED-STMn Input Parameters (cont 1 of 8)

rr	Parameter Name	Description
	<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.
STM1	<i>aid</i>	Access Identifier (starting in Release 1.2). Values: ■ Port AID of a SDH port. ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
STM1E	<i>aid</i>	See STM1 (starting in Release 3.1).
STM4	<i>aid</i>	See STM1 (starting in Release 1.3).
STM16	<i>aid</i>	See STM1 (starting in Release 1.2).
STM64	<i>aid</i>	See STM1 (starting in Release 2).
	<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.
STM1	<i>spec_block</i>	<i>degthr</i> Signal Degrade Threshold (starting in Release 3). This is less severe than <i>dexcthr</i> , the excessive degrade threshold. Values (as exponents of 10): ■ -5 ■ -6 (initial value 10⁻⁶) ■ -7 ■ -8 ■ -9.
STM1E		<i>degthr</i> See STM1 (starting in Release 3.1).
STM4		<i>degthr</i> See STM1 (starting in Release 3).
STM16		<i>degthr</i> See STM1 (starting in Release 3).
STM64		<i>degthr</i> See STM1 (starting in Release 3).

Table 3-33. ED-STMn Input Parameters (cont 2 of 8)

rr	Parameter Name	Description
STM1		dexcthr Excessive Degrade Threshold (starting in Release 3. This is more severe than degthr, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value 10^{-3}) ■ -4 ■ -5.
STM1E		dexcthr See STM1 (starting in Release 3.1).
STM4		dexcthr See STM1 (starting in Release 3).
STM16		dexcthr See STM1 (starting in Release 3).
STM64		dexcthr See STM1 (starting in Release 3).
STM1		emi EBER ignored for AIS insertion. This parameter controls the contribution of EBER to AIS insertion. If <i>emi</i> has a value of TRUE, then EBER will be ignored in the AIS insertion algorithm. That is, TRUE corresponds to disabling the consideration of EBER. Values: ■ TRUE (initial value) ■ FALSE.
STM1E		emi See STM1 (starting in Release 3.1).
STM4		emi See STM1 (starting in Release 1.3).
STM16		emi See STM1 (starting in Release 1.2).
STM64		emi See STM1 (starting in Release 2).
STM64		fec FEC Enable (starting in Release 2). Values: ■ ENABLE (initial value) ■ DISABLE.
STM64		feccor FEC Correction Enable (starting in Release 2). Values: ■ ENABLE (initial value) ■ DISABLE.

Table 3-33. ED-STMn Input Parameters (cont 3 of 8)

rr	Parameter Name	Description
STM64		fectype FEC Type (starting in Release 3) Values: ■ INBAND (initial value) ■ OUTBAND.
STM1		femspm Far-end Multiplex Section PM Enable (starting in Release 1.3). Values: ■ ENABLE ■ DISABLE (initial value).
STM1E		femspm See STM1 (starting in Release 3.1).
STM4		femspm See STM1 (starting in Release 1.3).
STM16		femspm See STM1 (starting in Release 1.3).
STM64		femspm See STM1 (starting in Release 2).
STM1		inputsig Tributary Input Signal Rate List. This parameter is a list of VCn rates across the port's bandwidth. Values: NX-NX-NX... where N is the number of Xs. X can be 3, 4, or 4C representing VC3, VC4 or VC4-4C. The initial value of X is 4. Example: an STM-16 signal might be represented by 93-14-14C-243 which implies 9 VC3s, 1 VC4, 1 VC4-4C, 24 VC3s. The representation is not unique, for example it could also be 33-63-14-14C-243. If trbmd is FIXED, then inputsig constrains the cross connection rates that can be entered for the port. If trbmd is ADAPTIVE, then input inputsig has no effect. Starting in Release 3, X may have the value 16C which represents VC-4-16C An STM-1 port can only have values of 3-3-3 or 4. A VC3 is equivalent to 1/3 of an STM-1. A VC4 is equivalent to one STM-1. A VC4-4C is equivalent to one STM-4. Attempting to assign values that are not consistent with the port's rate will be DENY'd. If the istd parameter is changed, then inputsig will automatically reset to its initial value.

Table 3-33. ED-STMn Input Parameters (cont 4 of 8)

rr	Parameter Name	Description
STM1E		<i>inputsig</i> See STM1 (starting in Release 3.1).
STM4		<i>inputsig</i> See STM1 (starting in Release 1.3).
STM16		<i>inputsig</i> See STM1 (starting in Release 1.2).
STM64		<i>inputsig</i> See STM1 (starting in Release 2).
STM1		<i>istd</i> Interface Standard (starting in Release 1.2). The initial value is set with the <i>istddflt</i> parameter in the ED-EQPT command. Values: ■ SONET ■ SDH. To change an SDH port to SONET, use ED-STMn. To change a SONET port to SDH, use ED-OCn. The command will be DENY'd if these rules are not followed. The pairs of commands are: (ED-OC3, ED-STM1), (ED-OC12, ED-STM4), (ED-OC48, ED-STM16), (ED-OC192, ED-STM64)
STM4		<i>istd</i> See STM1 (starting in Release 1.3).
STM16		<i>istd</i> See STM1 (starting in Release 1.2).
STM64		<i>istd</i> See STM1 (starting in Release 2).
STM1		<i>msdeg</i> Multiplex Section DEG Threshold. Values (as exponents of 10): ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9. The parameter <i>msdeg</i> is replaced in Release 3 by <i>degthr</i>.
STM4		<i>msdeg</i> See STM1 (starting in Release 1.3).
STM16		<i>msdeg</i> See STM1 (starting in Release 1.2).
STM64		<i>msdeg</i> See STM1 (starting in Release 2.0).

Table 3-33. ED-STMn Input Parameters (cont 5 of 8)

rr	Parameter Name	Description
STM1		<i>msdexc</i> Multiplex Section DEXC Threshold (starting in Release 1.2) Values: (as exponents of 10) ■ -3 (initial value 10⁻³) ■ -4 ■ -5. The parameter <i>msdexc</i> is replaced in Release 3 by <i>dex-cthr.</i>
STM4		<i>msdexc</i> See STM1 (starting in Release 1.3).
STM16		<i>msdexc</i> See STM1 (starting in Release 1.2).
STM64		<i>msdexc</i> See STM1 (starting in Release 2.0).
STM16		<i>phypm</i> See STM64 (starting in Release 3).
STM64		<i>phypm</i> Physical PM Enable (starting in Release 3). This enables/disables the physical parameters performance monitoring. Values: ■ ENABLE (initial value) ■ DISABLE.
STM16		<i>phytca</i> See STM64 (starting in Release 3).
STM64		<i>phytca</i> 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).

Table 3-33. ED-STMn Input Parameters (cont 6 of 8)

rr	Parameter Name	Description
STM1		<i>pmmsfeses</i> Performance Monitoring Multiplex Section Far-end SES Threshold (starting in Release 2). Values (as a percentage): 0 - 100 at increments of 5 Initial value: 15 The values are a percentage of the maximum number of bit errors. As an example, for STM-1, there can be a maximum number of 24 bit errors per frame. Using this number and the fact there are 8000 frames per second implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E		<i>pmmsfeses</i> See STM1 (starting in Release 3.1).
STM4		<i>pmmsfeses</i> See STM1 (starting in Release 2).
STM16		<i>pmmsfeses</i> See STM1 (starting in Release 2).
STM64		<i>pmmsfeses</i> See STM1 (starting in Release 2).
STM1		<i>pmmsneses</i> Performance Monitoring Multiplex Section Near-end SES Threshold (starting in Release 2). Values (as a percentage): 0 - 100 at increments of 5 Initial value: 15 The values are a percentage of the maximum number of bit errors. As an example, for STM-1, there can be a maximum number of 24 bit errors per frame. Using this number and the fact there are 8000 frames per second implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E		<i>pmmsneses</i> See STM1 (starting in Release 3.1).
STM4		<i>pmmsneses</i> See STM1 (starting in Release 2).
STM16		<i>pmmsneses</i> See STM1 (starting in Release 2).
STM64		<i>pmmsneses</i> See STM1 (starting in Release 2).

Table 3-33. ED-STMn Input Parameters (cont 7 of 8)

rr	Parameter Name	Description
STM1		<i>pmode</i> Port Mode. This parameter sets the mode of the port (starting in Release 1.2). Values: ■ AUTO (initial value) indicates that, when a signal is detected at the port, then alarm monitoring will start. ■ MON indicates that alarm monitoring is taking place on the port. ■ NMON means that alarm monitoring is not occurring on the port.
STM1E		<i>pmode</i> See STM1 (starting in Release 3.1).
STM4		<i>pmode</i> See STM1 (starting in Release 1.3).
STM16		<i>pmode</i> See STM1 (starting in Release 1.2).
STM64		<i>pmode</i> See STM1 (starting in Release 2).
STM1		<i>pmrsneses</i> Performance Monitoring Regenerator Section Near-end SES threshold (starting in Release 2) Values (as a percentage): 0 - 100 at increments of 5 Initial value: 30 The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
STM1E		<i>pmrsneses</i> See STM1 (starting in Release 3.1).
STM4		<i>pmrsneses</i> See STM1 (starting in Release 2).
STM16		<i>pmrsneses</i> See STM1 (starting in Release 2).
STM64		<i>pmrsneses</i> See STM1 (starting in Release 2).
STM1		<i>rsmstca</i> RS/MS TCA Profile Pointer (starting in Release 2). Values: TCA profile name.
STM1E		<i>rsmstca</i> See STM1 (starting in Release 3.1).
STM4		<i>rsmstca</i> See STM1 (starting in Release 2).
STM16		<i>rsmstca</i> See STM1 (starting in Release 2).
STM64		<i>rsmstca</i> See STM1 (starting in Release 2).

Table 3-33. ED-STMn Input Parameters (cont 8 of 8)

rr	Parameter Name	Description
STM1		<i>rsnemspm</i> Regenerator Section / Near-end Multiplex Section PM (starting in Release 1.3). Values: ■ ENABLE (initial value) ■ DISABLE.
STM1E		<i>rsnemspm</i> See STM1 (starting in Release 3.1).
STM4		<i>rsnemspm</i> See STM1 (starting in Release 1.3).
STM16		<i>rsnemspm</i> See STM1 (starting in Release 1.3).
STM64		<i>rsnemspm</i> See STM1 (starting in Release 2).
STM1		<i>sdhpn</i> SDH Alarm Severity Assignment Profile (starting in Release 1.3). This parameter sets an SDH ASAP profile name to which the designated AID points (See ENT-ASAP-PROF command). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default (initial value).
STM1E		<i>sdhpn</i> See STM1 (starting in Release 3.1).
STM4		<i>sdhpn</i> See STM1 (starting in Release 1.3).
STM16		<i>sdhpn</i> See STM1 (starting in Release 1.3).
STM64		<i>sdhpn</i> See STM1 (starting in Release 2).
STM1		<i>unequiposig</i> Tributary Unequipped Output Signal Rate List (starting in Release 1.2). This parameter is a list of VCn rates across the bandwidth of the port. It determines the rate(s) of the "unequipped" signal that will be transmitted if there is no cross connection. Values: See <i>inputsig</i> .
STM1E		<i>unequiposig</i> See STM1 (starting in Release 3.1).
STM4		<i>unequiposig</i> See STM1 (starting in Release 1.3).
STM16		<i>unequiposig</i> See STM1 (starting in Release 1.2).
STM64		<i>unequiposig</i> See STM1 (starting in Release 2).

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 table that follows describes the input parameters for **ED-VC3**. The **ED-VC3** command is also applicable to VC4 tributaries. Even though a VC4 signal is not a concatenated VC3 signal in a strict sense, from a pointer processor viewpoint it can be considered to be comprised of three VC3 signals which have the properties of a concatenated signal. Thus, it is not necessary to have a separate **ED-VC4** command. Similarly, **ED-VC3** is also applicable to VC4-4C and other "concatenated" tributaries.

The **rr** column identifies the **ED-rr** command.

Even if the command is used for a concatenated signal, it can be applied to any of the tributaries (for example, to the second tributary of the concatenated signal). However, only the parameters pertaining to the first tributary of a concatenated signal are used by the software to determine system operation. If the signal were changed from a concatenated signal to non-concatenated, then the parameters for each of the tributaries would be used by the software.

Table 3-34. Tributary Input Parameters (cont 1 of 6)

rr	Parameter Name	Description
	<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.
STS1	<i>aid</i>	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 STS12c tributaries.]
VC3	<i>aid</i>	Access Identifier (starting in Release 1.2). Values: ■ Tributary AID of a SDH tributary. ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
	<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.

Table 3-34. Tributary Input Parameters (cont 2 of 6)

rr	Parameter Name	Description
VC3	<i>spec_block</i>	<i>brstintvl</i> Bursty Interval (starting in Release 3.1). Measurement period for determining bursty errors. See <i>brstthr</i>. Values: ■ 2 to 10 (seconds) Initial value: 7
VC3		<i>brstthr</i> Bursty error Threshold (starting in Release 3.1). Threshold value for bursty errors. Values (as a percentage): 0 - 100 at increments of 5 Initial value: 30
STS1		<i>degthr</i> Path BER threshold (starting in Release 2). Values (as exponents of 10): ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9.
VC3		<i>degthr</i> Path BER threshold (starting in Release 2). Values (as exponents of 10): ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9.
STS1		<i>dexcthr</i> Excessive Degrade Threshold (starting in 3). This is more severe than <i>degthr</i>, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value 10^{-3}) ■ -4 ■ -5.

Table 3-34. Tributary Input Parameters (cont 3 of 6)

rr	Parameter Name	Description
VC3		<i>dexcthr</i> Excessive Degrade Threshold (starting in 3). This is more severe than <i>degthr</i>, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value 10^{-3}) ■ -4 ■ -5.
STS1		<i>msdexc</i> Multiplex Section DEXC Threshold Values: (as exponents of 10) ■ -3 (initial value 10^{-3}) ■ -4 ■ -5. The parameter <i>msdexc</i> is replaced in Release 3 by <i>dexcthr</i>.
VC3		<i>msdexc</i> Multiplex Section DEXC Threshold (starting in Release 1.2) Values: (as exponents of 10) ■ -3 (initial value 10^{-3}) ■ -4 ■ -5. The parameter <i>msdexc</i> is replaced in Release 3 by <i>dexcthr</i>.
VC3		<i>pmhpfeses</i> Higher-order Path Far-end SES Threshold (starting in Release 2). See <i>pmhpnesees</i>.
VC3		<i>pmhpnesees</i> Higher-order Path Near-end SES Threshold (starting in Release 2). Values (as a percentage): 0 - 50 at increments of 5 Initial value: 30 The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec; thus, the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.

Table 3-34. Tributary Input Parameters (cont 4 of 6)

rr	Parameter Name	Description
STS1		ppm Path PM Enable (starting with Release 1.3). This enables/disables the STS-1 path parameters performance monitoring for both the near end and far end. Values: ■ ENABLE ■ DISABLE (initial value).
VC3		ppm Path PM Enable (starting in Release 1.3). 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 3.1). This parameter is applicable to the following prototypes: Values: ■ ENABLE (initial value) ■ DISABLE.
STS1		ptca Path TCA (starting in Release 2). 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).
VC3		ptca Path TCA Profile Pointer (starting in Release 2). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value).

Table 3-34. Tributary Input Parameters (cont 5 of 6)

rr	Parameter Name	Description
STS1		<i>ptrcrfmt</i> Starting in Release 1.2, the read format of J1, the incoming path trace (<i>ptrc</i>). 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.
VC3		<i>ptrcrfmt</i> Starting in Release 1.2, the read format of J1, the incoming path trace (<i>ptrc</i>). 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.
STS1		<i>tmonmd</i> 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.

Table 3-34. Tributary Input Parameters (cont 6 of 6)

rr	Parameter Name	Description
VC3		<i>tmonmd</i> Tributary Monitoring Mode (starting in Release 1.2). This parameter sets the mode of the tributary. Values: ■ MON indicates that alarm monitoring is taking place on the port. ■ NMON (initial value) means that alarm monitoring is not occurring on the port.
VC3		<i>tribsdhpn</i> Tributary Alarm Severity Assignment Profile (starting in Release 1.3). 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).
STS1		<i>tribsonetpn</i> Tributary Alarm Severity Assignment Profile (starting in Release 1.3). 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**.

Table 3-35. **ED - T3** Input Parameters (cont 1 of 8)

rr	Parameter Name	Description
	<i>tid</i>	Target Identifier. Refer to RTRV - HDR command for input parameter syntax and description of this parameter.

Table 3-35. ED - T3 Input Parameters (cont 2 of 8)

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.
T3	spec_block	ds3in DS3 input port Alarm Severity Assignment Profile (starting in Release 1.3). 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 1.3). 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 .

Table 3-35. ED - T3 Input Parameters (cont 3 of 8)

rr	Parameter Name	Description
T3	<i>elf</i>	Electrical Interface Type (starting in Release 2). 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.
T3	<i>fmt</i>	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	<i>inpm</i>	DS3 Incoming PM Enable (starting in Release 1.3). This enables/disables the incoming DS3 parameters performance monitoring. Values: ■ ENABLE ■ DISABLE (initial value).

Table 3-35. ED - T3 Input Parameters (cont 4 of 8)

rr	Parameter Name	Description
T3		<i>itca</i> Incoming DS3 PM TCA (starting in Release 1.3). 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).
T3		<i>otca</i> Outgoing DS3 PM TCA (starting in Release 1.3). 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).
T3		<i>outpm</i> DS3 Outgoing PM Enable (starting in Release 1.3). This enables/disables the outgoing DS3 parameters performance monitoring. Values: ■ ENABLE ■ DISABLE (initial value).
T3		<i>pdir</i> Port Directionality. This parameter allows the port to operate in bidirectional or unidirectional port mode. Values: ■ BIDIR (initial value) ■ UNIDIR-TRM ■ UNIDIR-RCV.

Table 3-35. ED - T3 Input Parameters (cont 5 of 8)

rr	Parameter Name	Description
T3		<i>pmode</i> Port Mode (starting in Release 2). 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		<i>pmptfhpfses</i> PTF Higher-order Path Far-end SES Threshold (starting in Release 2). This parameter only applies when <i>ptfstd</i> has value SDH. Values: See <i>pmptfhpneses</i>.
T3		<i>pmptfhpneses</i> PTF Higher-order Path Near-end SES Threshold (starting in Release 2). This parameter only applies when <i>ptfstd</i> has value SDH. Values: ■ 1 - 8000 (2400 initial value)
T3		<i>pmsesl</i> PM threshold (errors in a second) for declaring SES - line (starting in Release 1.3). Values: ■ 44 (initial value) ■ 2444.
T3		<i>pmsesp</i> PM threshold (errors in a second) for declaring SES - path (starting in Release 1.3). Values: ■ 44 (initial value) ■ 2444.
T3		<i>pmsespfe</i> PM threshold (errors in a second) for declaring far end SES - path (starting in Release 1.3). Values: See <i>pmsesp</i>.

Table 3-35. ED - T3 Input Parameters (cont 6 of 8)

rr	Parameter Name	Description
T3		<i>ptffmcrs</i> PTF FM Crossconnect Dependency (starting in Release 1.3). Values: ■ YES (initial value if <i>ptfstd</i> is SONET) ■ NO (initial value if <i>ptfstd</i> is SDH).
T3		<i>ptfpm</i> PTF PM Enable (starting in Release 2). It indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE ■ DISABLE (initial value).
T3		<i>ptfstd</i> PTF Standard (starting in Release 1.3). Values: ■ SONET ■ SDH. The value of <i>istddflt</i> in ED - EQPT command (initial value).
T3		<i>ptftca</i> PTF TCA Profile Pointer (starting in Release 2). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value).

Table 3-35. ED - T3 Input Parameters (cont 7 of 8)

rr	Parameter Name	Description
T3		<i>ptrcwfmt</i> Starting in 1.3, write format of J1, the outgoing path trace (<i>trc</i>). 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		<i>sdthr</i> Signal Degrade Threshold. This sets the BER threshold for the DS3 electrical signal. Values (as exponents of 10): ■ -4 ■ -6 (initial value 10^{-6}). The value of -4 is actually 4×10^{-4} BER.
T3		<i>tmonmd</i> Tributary monitoring mode (starting in Release 1.3). 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 3-35. ED - T3 Input Parameters (cont 8 of 8)

rr	Parameter Name	Description
T3	<i>trc</i>	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 <i>ptrcwfmt</i> parameter. ■ 00 (initial value. 0x00 is the ASCII null character).
T3	<i>vmr</i>	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.

EXAMPLE INPUT/OUTPUT

The following is an example of the **ED-rr** command:

```
ED-0C48:LT-WBM:1-1-f01-ew-06-1:123456:::sdthr=-8,sonet=mci,sltca=alert,  
pmode=mon;  
  
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 apply to the **ED-rr** command.

RELATED TL1 MESSAGES

RTRV-rr

SET-SYNCN

NAME

ED-RSVN: Edit Reservation

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

The syntax for Release 1.0 only is:

ED-RSVN: *tid:aid:ctag::[:spec_block];*

Starting with Release 1.2, the syntax is:

ED-RSVN-modifier: *tid:aid:ctag::[:spec_block];*

DESCRIPTION

The **ED-RSVN** command can be initiated by a user to modify the reservation parameters of tributaries with existing reservation in the network element.

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

INPUT PARAMETERS

Table 3-36. ED-RSVN Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	This parameter is supported in Release 1.2. Modifier indicates the cross-connection rate of the tributary on which the established reservation command is to act. Values:

Table 3-36. ED-RSVN Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. Value: logical tributary AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	node Specifies the new <i>tid</i> of the node that provides the BLSR connection. This parameter is omitted for non-BLSR connections. Value: See <i>tid</i> in the RTRV-HDR command. Starting in Release 3.0, the value becomes a text sting of up to 20 characters and 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters).

OUTPUT FORMAT

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

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

The network element returns a normal completion response for a successful **ED-RSVN** request even though the command does not modify the value(s) of the existing reservation.

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-RSVN** command on an existing reservation that is intended for a BLSR connection:

```
ED-RSVN-STS1:LT-WBM-789:1-1-#-#-02-1-1:123456:::NODE=LT-WBM-456;  
LT-WBM-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows the successful completion of an **ED-RSVN** command on an existing reservation that is intended for a BLSR connection:

```
ED-RSVN-VC3:LT-WBM-789:1-1-#-#-02-1-1:123456:::NODE=LT-WBM-456;  
LT-WBM-789 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 apply to the **ED-RSVN** command. The following additional error response is also applicable.

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.

RELATED TL1 MESSAGES

DLT - RSVN

ENT - RSVN

RTRV - RSVN

NAME

ED-STATE-EQPT: Edit State Equipment

The **ED-STATE-EQPT** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.2

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 3.0, 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 3-37. ED-STATE-EQPT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1.2. Value: system AID. See the AID table in OSEG Appendix A.

Table 3-37. ED-STATE-EQPT Input Parameters (cont 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	Unless otherwise stated, if a spec_block parameter is omitted, its value will not be changed. mcond This parameter is available starting in Release 1.2. Maintenance Condition. Modifying this parameter from Y to N causes a system reset. Values: Y or N. rstmd This parameter is available starting in Release 1.2. Restoration Mode. Note that rstmd and mcond are mutually exclusive states. In other words, you can set mcond, or rstmd, but not both. Values: 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 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 apply to the **ED-STATE-EQPT** command.

If the system is not able to exit restoration mode, the following error response is returned:

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

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ENT-EQPT

RTRV-EQPT

RTRV-STATE-EQPT

NAME

ED-TCA-PROF: Edit TCA Profile

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

- WaveStar BandWidth Manager, Release 1.3

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.

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

INPUT PARAMETERS

Table 3-38. ED-TCA-PROF Input Parameters (cont 1 of 11)

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

Table 3-38. ED - TCA - PROF Input Parameters (cont 2 of 11)

Parameter Name	Description
<i>pftype</i>	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ PHYSICAL ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC
<i>pfname</i>	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.
<i>spec_block</i>	newname This parameter allows a new name to be assigned to the already established profile. Values: ■ 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. opt Optical Transmitter. Values: ■ 0 ■ 1 (1). A value of 1 will enable thresholding to the default value.

Table 3-38. ED-TCA-PROF Input Parameters (cont 3 of 11)

Parameter Name	Description
	opr Optical Receiver. 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) qhseess 15-minute SES-S bin. Range: 0-810 (10) dayseess 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)

Table 3-38. ED-TCA-PROF Input Parameters (cont 4 of 11)

Parameter Name	Description
	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 Day 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) qhfecc1 15-minute FECC-L OC-192 bin. Range: 0-5184000 (5184) dayfecc1 Day FECC-L OC-192 bin. Range: 0-497664000 (497664) qhfecul 15-minute FECU-L OC-192 bin. Range: 0-2592000 (2592)

Table 3-38. ED - TCA - PROF Input Parameters (cont 5 of 11)

Parameter Name	Description
	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: qhcvpsts115-minute CV-P and CV-PFE bin for STS-1. Range: 0-65535 & (15) daycvpsts1Day CV-P and CV-PFE bin for STS-1. Range: 0-8388607 && (125) qhcvpsts3c15-minute CV-P and CV-PFE bin for STS-3c. Range: 0-65535 & (25) daycvpsts3cDay CV-P and CV-PFE bin for STS-3c. Range: 0-8388607 && (250) qhcvpsts12c15-minute CV-P and CV-PFE bin for STS-12c. Range: 0-16777215 * (75) daycvpsts12cDay CV-P and CV-PFE bin for STS-12c. Range: 0-2147483647 ** (750) qhcvpsts48c15-minute CV-P and CV-PFE bin for STS-48c. Range: 0-16777215 * (300) daycvpsts48cDay CV-P and CV-PFE bin for STS-48c. Range: 0-2147483647 ** (3000) qhespsts115-minute ES-P and ES-PFE bin for STS-1. Range: 0-900 (12) dayespsts1Day ES-P and ES-PFE bin for STS-1. Range: 0-86400 (100) qhespsts3c15-minute ES-P and ES-PFE bin for STS-3c. Range: 0-900 (20) dayespsts3cDay ES-P and ES-PFE bin for STS-3c. Range: 0-86400 (200) qhespsts12c15-minute ES-P and ES-PFE bin for STS-12c. Range: 0-900 (60)

Table 3-38. ED - TCA - PROF Input Parameters (cont 6 of 11)

Parameter Name	Description
	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) qhsest 15-minute SES-P and SES-PFE bin. Range: 0-810 (3) daysesp Day SES-P and SES-PFE bin. Range: 0-77760 (7) qhualsp 15-minute UAS-P and UAS-PFE bin. Range: 0-900 (10) dayualsp 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 3-38. ED-TCA-PROF Input Parameters (cont 7 of 11)

Parameter Name	Description
	daycvi 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) qhsest 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) qheseap 15-minute ESA-P and ESA-PFE bin. Range: 0-900 (25) dayeseap Day ESA-P and ESA-PFE bin. Range: 0-86400 (250) qhesebp 15-minute ESB-P and ESB-PFE bin. Range: 0-900 (25) dayesebp Day ESB-P and ESB-PFE bin. Range: 0-86400 (250) qheseap 15-minute SES-P and SES-PFE bin. Range: 0-810 (4) daysesap Day SES-P and SES-PFE bin. Range: 0-77760 (40) qheseap 15-minute SAS-P and SAS-PFE bin. Range: 0-900 (2) daysasp Day SAS-P and SAS-PFE bin. Range: 0-86400 (8)

Table 3-38. ED - TCA - PROF Input Parameters (cont 8 of 11)

Parameter Name	Description
	qhualsp 15-minute UAS-P and UAS-PFE bin. Range: 0-900 (10) dayualsp Day UAS-P and UAS-PFE bin. Range: 0-86400 (10) The following parameters belong to SDH RS-MS profile type: qhrrsnes 15-minute RS_N_ES bin. Range: 0-900 (180) dayrrsnes Day RS_N_ES bin. Range: 0-86400 (1500) qhrrsneses 15-minute RS_N_SES bin. Range: 0-810 (15) dayrrsneses Day RS_N_SES bin. Range: 0-77760 (20) qhrrsnbbe 15-minute RS_N_BBE bin. Range: 0-7199100 (9000) dayrrsnbbe Day RS_N_BBE bin. Range: 0-691113600 (48000) qhrrsnuas 15-minute RS_N_UAS bin. Range: 0-900 (15) dayrrsnuas Day RS_N_UAS bin. Range: 0-86400 (20) The following parameters belong to SDH MS profile type: qhrrmses 15-minute MS_N_ES and MS_F_ES bin. Range: 0-900 (50) dayrrmses Day MS_N_ES and MS_F_ES bin. Range: 0-86400 (150) qhrrmseses 15-minute MS_N_SES and MS_F_SES bin. Range: 0-810 (10) dayrrmseses Day MS_N_SES and MS_F_SES bin. Range: 0-77760 (15) qhrrmsbbestm1 15-min MS_N_BBE and MS_F_BBE stm1 bin. Range: 0-16777215 *(228000) dayrrmsbbestm1 Day MS_N_BBE and MS_F_BBE stm1 bin. Range: 0-2147483647 ** (432000)

Table 3-38. ED - TCA - PROF Input Parameters (cont 9 of 11)

Parameter Name	Description
	qhmsbbestm4 15-min MS_N_BBE and MS_F_BBE stm4 bin. Range: 0-16777215 *(912000) daymsbbestm4 Day MS_N_BBE and MS_F_BBE stm4 bin. Range: 0-2147483647 **(1728000) qhmsbbestm16 15-min MS_N_BBE/MS_F_BBE stm16 bin. Range: 0-16777215 *(3648000) daymsbbestm16 Day MS_N_BBE and MS_F_BBE stm16 bin. Range: 0-2147483647 **(6912000) qhmsbbestm64 15-min MS_N_BBE/MS_F_BBE stm64 bin. Range: 0-16777215 *(14592000) daymsbbestm64 Day MS_N_BBE and MS_F_BBE stm64 bin. Range: 0-2147483647 **(27648000) qhmsuas 15-min MS_N_UAS/MS_F_UAS stm64 bin. Range: 0-900 (15) daymsuas Day MS_N_UAS and MS_F_UAS stm64 bin. Range: 0-86400 (20) qhmsnfeccl 15-min MS_N_FECC stm64 bin. Range: 0-5184000(5184) daymsnfeccl Day MS_N_FECC stm64 bin. Range: 0-497664000 (497664) qhmsnfecul 15-min MS_N_FECU stm64 bin. Range: 0-2592000 (2592) daymsnfecul Day MS_N_FECU stm64 bin. Range: 0-248832000 (248832) The following parameters belong to SDH HOVC profile type: qhvcsvcl 15-minute VC_N_ES and VC_F_ES VC3 bin. Range: 0-900 (150) dayvcsvcl Day VC_N_ES and VC_F_ES VC3 bin. Range: 0-86400 (600) qhvcsvcl 15-minute VC_N_ES and VC_F_ES VC4 bin. Range: 0-900 (180) dayvcsvcl Day VC_N_ES and VC_F_ES VC4 bin. Range: 0-86400 (1500)

Table 3-38. ED - TCA - PROF Input Parameters (cont 10 of 11)

Parameter Name	Description
	qhvcsv44c15-minute VC_N_ES/VC_F_ES VC4-4C bin. Range: 0-900 (180) dayvcsv44cDay VC_N_ES/VC_F_ES VC4-4C bin. Range: 0-86400 (1500) qhvcsv416c15-minute VC_N_ES/VC_F_ES VC4-16C bin. Range: 0-900 (180) dayvcsv416cDay VC_N_ES/VC_F_ES VC4-16C bin. Range: 0-86400 (1500) qhvcsv315-minute VC_N_SES/VC_F_SES VC3 bin. Range: 0-810 (15) dayvcsv3Day VC_N_SES/VC_F_SES VC3 bin. Range: 0-77760 (20) qhvcsv415-minute VC_N_SES/VC_F_SES VC4 bin. Range: 0-810 (15) dayvcsv4Day VC_N_SES/VC_F_SES VC4 bin. Range: 0-77760 (20) qhvcsv44c15-minute VC_N_SES/VC_F_SES VC44C bin. Range: 0-810 (15) dayvcsv44cDay VC_N_SES/VC_F_SES VC44C bin. Range: 0-77760 (20) qhvcsv416c15-minute VC_N_SES/VC_F_SES VC416C bin. Range: 0-810 (15) dayvcsv416cDay VC_N_SES/VC_F_SES VC416C bin. Range: 0-77760 (20) qhvcbbvc315-minute VC_N_BBE/VC_F_BBE VC3 bin. Range: 0-65535 &(36000) dayvcbbvc3Day VC_N_BBE/VC_F_BBE VC3 bin. Range: 0-8388607 &&(48000) qhvcbbvc415-minute VC_N_BBE/VC_F_BBE VC4 bin. Range: 0-65535 &(36000) dayvcbbvc4Day VC_N_BBE/VC_F_BBE VC4 bin. Range: 0-8388608 &&(48000) qhvcbbvc44c15-minute VC_N_BBE/VC_F_BBE VC44C bin. Range: 0-16777215 *(36000)

Table 3-38. ED - TCA - PROF Input Parameters (cont 11 of 11)

Parameter Name	Description
	dayvcbbevc44cDay VC_N_BBE/VC_F_BBE VC44C bin. Range: 0-2147483647 **(48000) qhvcbbevc416c15-minute VC_N_BBE/VC_F_BBE VC416C bin. Range: 0-16777215 *(36000) dayvcbbevc416cDay VC_N_BBE/VC_F_BBE VC416C bin. Range: 0-2147483647 **(48000) qhvcuasvc315-minute VC_N_UAS/VC_F_UAS VC3 bin. Range: 0-900 (15) dayvcuasvc3Day VC_N_UAS/VC_F_UAS VC3 bin. Range: 0-86400 (20) qhvcuasvc415-minute VC_N_UAS/VC_F_UAS VC4 bin. Range: 0-900 (15) dayvcuasvc4Day VC_N_UAS/VC_F_UAS VC4 bin. Range: 0-86400 (20) qhvcuasvc44c15-minute VC_N_UAS/VC_F_UAS VC44C bin. Range: 0-900 (15) dayvcuasvc44cDay VC_N_UAS/VC_F_UAS VC44C bin. Range: 0-86400 (20) qhvcuasvc416c15-minute VC_N_UAS/VC_F_UAS VC416C bin. Range: 0-900 (15) dayvcuasvc416cDay VC_N_UAS/VC_F_UAS VC416C bin. Range: 0-86400 (20)

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 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 apply to the **ED-TCA-PROF** command.

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 BandWidth Manager, Release 1.3

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 3-39. ED-USER Input Parameters (cont 1 of 2)

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

Table 3-39. ED-USER Input Parameters (cont 2 of 2)

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 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 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

- 1.

INPUT FORMAT

ED-USER-SECU: *tid:uid:ctag::, [new_pid], , [upc] [: spec_block];*

DESCRIPTION

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

The network element shall always have two preinstalled users with full privileges in all functional categories. These two users will be referred to as Administrators (or Superusers). The network element will not allow adding additional administrator type users. It will not be possible to remove either of the original administrator login IDs. An administrator's **upc** cannot be modified using the **ED-USER-SECU** command.

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

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

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

INPUT PARAMETERS

Table 3-40. ED-USER-SECU Input Parameters (cont 1 of 4)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	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.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>new_pid</i>	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.
<i>upc</i>	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 <i>upc</i> 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: Pi, Mi, Ti, Si, PMi, Di 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 3-40. ED-USER-SECU Input Parameters (cont 2 of 4)

Parameter Name	Description
	Starting with Release 1.2, the value of <i>i</i> is 0 (low) to 5 (high), except for the S category, which only supports levels 1 to 5. If an authorization level is set to 0, the user will have no privileges for that functional category. In other words, an authorization level of 0 disables that functional category for that user. The initial authorization level is 1 for all functional categories, except for the D category, which has an initial level of 0. <u>Note:</u> 'Di' is a Lucent-only category which can only be used with a special password. <i>uids</i> with Di as the <i>upc</i> 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.
<i>spec_block</i>	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. screen Message screening specifies the type of notifications and/or responses that are received by the <i>uid</i>. 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.

Table 3-40. ED-USER-SECU Input Parameters (cont 3 of 4)

Parameter Name	Description
■ 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.	
page Password Aging Interval. This parameter is available starting in Release 3. 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	
tmout Inactivity Timeout Period. This parameter is available starting in Release 3. 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	
alw_login Allow Login. This parameter is available starting in Release 3.1. 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.	

Table 3-40. ED-USER-SECU Input Parameters (cont 4 of 4)

Parameter Name	Description
	uidclass UID Class. This parameter is available starting in Release 2. This is the user class of a uid. Values: ■ MEMADMIN The user is a memory administration operations system. If uidclass is set to MEMADMIN, the value of screen can only be set to NA. ■ OTHER This is the initial value. 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.

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

If the **ED-USER-SECU** command does not alter existing user security parameters, the network element provides a normal completion response. An example is when

the *upc* of the *uid* is **P3** and an **ED-USER-SECU** command is received which sets the *upc* to **P3**.

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

```
ED-USER-SECU:LT-WBM-789:kjlee:123456::,pass13+, ,P3&M3&PM2:
SCREEN=DBCHG;

LT-WBM-789 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 apply to the **ED-USER-SECU** command.

RELATED TL1 MESSAGES

DLT-USER-SECU

ENT-USER-SECU

RTRV-USER-SECU

NAME

ENT-ASAP-PROF: Enter Alarm Severity Assignment Profile

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

- WaveStar BandWidth Manager, Release 1.3

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** No Alarm
- **NR** Not Reported.

There are different types of ASAP profiles. Some examples of different profile types (*pftype*) are: **APS** and **BLSR**. Each profile type has a set of parameters, and each parameter has a default value, like **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.

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 3-41. Assignment of ASAP Profiles

<i>pftype</i>	Description
DS3IN	ED-T3 (incoming DS3)
DS3OUT	ED-T3 (outgoing DS3)
SDH	ED-STMn
SONET	ED-OCn
TRIBSDH	ED-VC3
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 3-42. **ENT-ASAP-PROF** Input Parameters (cont 1 of 2)

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

Table 3-42. ENT - ASAP - PROF Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>pftype</i>	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). ■ DS3IN DS3 Port (input) ■ DS3OUT DS3 Port (output), connected to a SONET port ■ DS3OUTSDH DS3 Port (output), connected to an SDH port ■ EQPT Equipment ■ SDH STM-N Port ■ SONET OC-N/EC1 Port ■ TIMING System Timing ■ TRIBSDH AU-N point-point tributary (nonprotected tributary). ■ TRIBSONET STS-N(c) SONET tributary
<i>pfname</i>	Profile Name. This parameter indicates the name of the ASAP profile. This is an alphanumeric character string with a maximum of 24 characters.

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 3-43. Maximum Profiles for each Profile Type

<i>pftype</i>	Maximum # of profiles
APS	3
BLSR	3
DS3IN	6
DS3OUT	6
DS3OUTSDH	6
EQPT	6
SDH	10
SONET	10
TIMING	2
TRIBSDH	6
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 an **EQPT** ASAP profile that is named att:

```
ENT-ASAP-PROF:LT-WBM::123456::eqpt,att;  
    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 **ENT-ASAP-PROF** command.

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.

RELATED TL1 MESSAGES

ED-ASAP-PROF

RTRV-ASAP-PROF

NAME

ENT - CRS: Enter Cross-Connection

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

3.

INPUT FORMAT

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

Starting with Release 3.1, the syntax is:

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

DESCRIPTION

The **ENT - CRS** command can be initiated by a user to establish cross-connection between valid logical tributaries in the network element.

The *modifier* in the **ENT - CRS** command indicates the cross-connection rate of the tributary on which the **ENT - CRS** command is going to act. The number of cross-connections from the same logical input tributary is restricted to two. The network element accepts **ENT - CRS** commands requesting cross-connections to the protection tributaries of a BLSR.

The **ED - CRS** command can be used to modify cross-connections, **DLT - CRS** can be used to delete cross-connection, and **RTRV - CRS** can be used to indicate existing cross-connections. The **ENT - ROLL** command can be initiated by a user to roll the input of an existing leg of a cross-connection from a given tributary to another tributary, while leaving the output unchanged.

If a tributary is in test access mode, then the cross connections commands **ENT/ED - CRS** cannot be used on that tributary. A test access connection is established

by the **CONN - TACC** command and disconnected by the **DISC - TACC** command. See **CONN - TACC** for more details.

If a loopback exists on a tributary, then the cross connection commands **ENT/ED - CRS** cannot be used on that tributary. A loopback is established via the **OPR - LPBK** and deleted by the **RLS - LPBK** command. See **OPR - LPBK** for more details.

The **ENT - RSVN** command can be initiated by a user to establish a reservation on one or more tributaries on a tributary. A reservation places limitations on any future cross connections for the reserved tributaries. See the **ENT - RSVN** command for more details.

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

INPUT PARAMETERS

Table 3-44. ENT - CRS Input Parameters (cont 1 of 5)

Parameter Name	Description
<i>appg_aid</i>	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.
<i>cct</i>	Cross Connect Topology. Values: ■ 1WAY ■ 2WAY(default) ■ 1WAYPPROT (starting with Release 3.1) ■ ADJCTPPROT (starting with Release 3.1).
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>in_aid</i>	Input Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A).

Table 3-44. ENT - CRS Input Parameters (cont 2 of 5)

Parameter Name	Description
<i>in_aid2</i>	2nd Input Access Identifier. This parameter is applicable to path-protected and adjunct path protected cross-connections. The tributary specified via <i>in_aid</i> is the working leg and the tributary specified by <i>in_aid2</i> is the protection leg. Value: logical tributary AID.
<i>out_aid</i>	Output Access Identifier. Value: logical tributary AID.
<i>modifier</i>	Modifier indicates the cross-connection rate on which the establish cross-connect command acts. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	
	<i>loca</i> Identifies the <i>tid</i> associated with <i>in_aid</i> 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 <i>out_aid</i> is a non BLSR trib. This parameter is not applicable to ADD and non-BLSR connections Values: See <i>tid</i> in the RTRV - HDR command. Starting in Release 3.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).

Table 3-44. ENT - CRS Input Parameters (cont 3 of 5)

Parameter Name	Description
	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. <u>Note:</u> Output mode IDLE is for DS3 tributaries and UNEQ is for tributaries from SONET/SDH interfaces. ppbv Path Protection Behavior parameter is used to set the initial values of the path protection switching parameters for the path protection group that is established as part of a path-protected atomic cross-connection. Values: ■ NN (rme=DISABLE, hte=DISABLE) ■ RN (rme=ENABLE, hte=DISABLE) ■ NH (rme=DISABLE, hte=ENABLE) ■ RH (rme=ENABLE, hte=ENABLE) The initial value is NN for UPSR, for DNI/DRI the initial value is RN. ppbv is not returned by RTRV - CRS. RTRV - PROTN - GRP should be used to return rme, hte. ppgname Path Protection Group Name is a user-defined string that identifies a path protection group. An alphanumeric string, upper and lower case, spaces and periods allowed, up to 24 characters. Must be included in quotes. The maximum number of path protection groups that can have the same name is 192.

Table 3-44. ENT - CRS Input Parameters (cont 4 of 5)

Parameter Name	Description
	The maximum number of unique path protection names is 3072 for BWM 9216 and 1536 for BWM 4608. 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 3-44. ENT - CRS Input Parameters (cont 5 of 5)

Parameter Name	Description
	<i>xcnum</i> 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 <i>out_aid</i>): 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.
<i>state_block</i>	<i>pst</i> Specifies the primary state. THIS PARAMETER IS NOT USED IN THIS COMMAND. A comma (,) is placed in this position to indicate that this is not in use.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows a successful completion of **ENT - CRS** command for a 2WAY STS1 BLSR ADD/DROP connection:

```
ENT-CRS-STS1:LT-WBM-789:4-2-#-#-02-2-1,4-2-#-#-09-1-7:123456::2WAY:
RTNOMODE=NORM,LOCZ=LT-WBM-567;

LT-WBM-789 98-01-01 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 98-01-01 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 98-01-01 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 98-01-01 08:00:00
M 123456 COMPLD
;
```

The following example shows a successful completion of **ENT - CRS** command for a 1WAY VC3 BLSR THROUGH connection:

```
ENT-CRS-VC3:LT-WBM-789:4-2-#-#-02-1-1,4-2-#-#-06-1-1:123456::1WAY:
LOCA=LT-WBM-345,LOCZ=LT-WBM-567;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
;
```

The following example shows a successful completion of **ENT - CRS** command of a 2WAY VC3 non-BLSR connection:

```
ENT-CRS-VC3:LT-WBM-789:2-1-#-#-14-2,1-1-#-#-1-13-1:123456::RTNOMODE=
NORM;

LT-WBM-789 98-01-01 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.

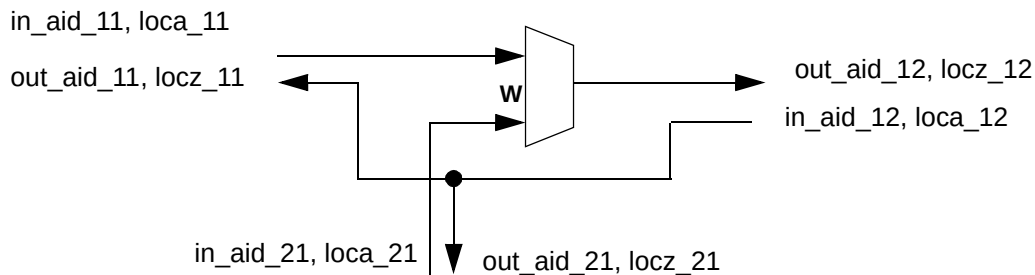


Table 3-45. Drop-and-Continue, BLSR (or MS-SPRing) Primary Node Cross Connections

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**.

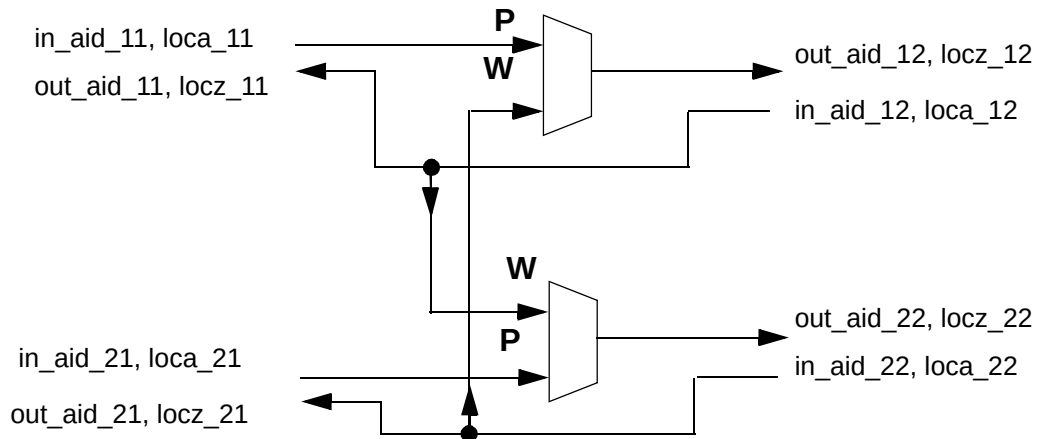


Table 3-46. Drop-and-Continue, BLSR (or MS-SPRing) Primary Nodes in Same NE

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.

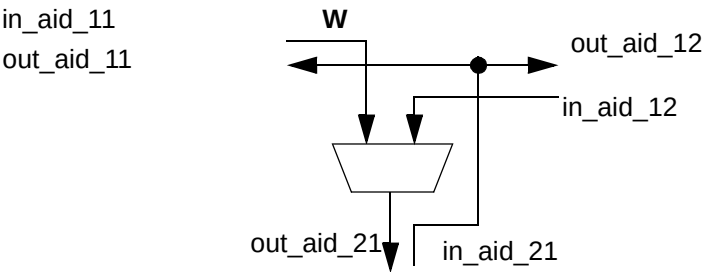


Table 3-47. UPSR (or SNCP Ring) Add, Drop Cross Connections

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 Crossconnections**.

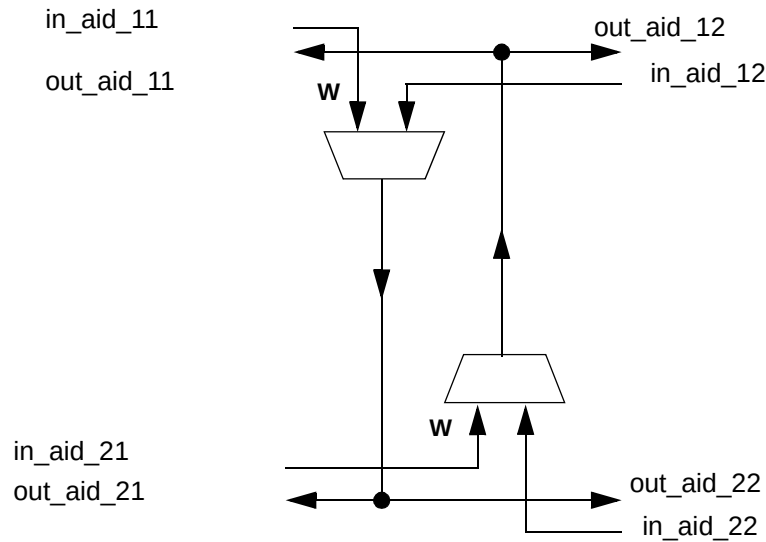


Table 3-48. UPSR (or SNCP Ring) Ring-to-Ring, Single Node Interconnection, Same NE

cct	in_aid	out_aid	in_aid2	appg_aid
1WAYPPROT	in_aid_11	out_aid_21	in_aid_12	out_aid_21
ADJCTPPROT	in_aid_11	out_aid_22	in_aid_12	
1WAYPPROT	in_aid_21	out_aid_11	in_aid_22	out_aid_11
ADJCTPPROT	in_aid_21	out_aid_12	in_aid_22	

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 98-01-01 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 98-01-01 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 98-01-01 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 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 apply to the **ENT-CRS** command.

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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ENT -EQPT: *tid:aid:ctag:::[spec_block];*

DESCRIPTION

The **ENT -EQPT** command manually creates and provisions equipment components in the system database.

A shelf must be created first before its circuit packs can be created.

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

INPUT PARAMETERS

Table 3-49. ENT -EQPT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV -HDR command for input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is the address of the equipment component to be created. Values: ■ I/O bay AID. ■ I/O shelf AID.

Table 3-49. ENT-EQPT Input Parameters (cont 2 of 2)

Parameter Name	Description
	Slot AID. The keyword "all" is allowed in the slot AID.
<i>ctag</i>	Correlation Tag. Refer to RTRV - HDR command for input parameter syntax and description of this parameter.
<i>spec_block</i>	nvmname Circuit Pack Name. This parameter is available starting in Release 1. This parameter is only allowed with a slot AID. Values: See the following table for the values of this parameter. nvmqual Circuit Pack Qualifier. This parameter is available starting in Release 1. This parameter is only allowed with a slot AID. This parameter is required when creating a slot circuit pack. Values: See the following table for the values of this parameter. bswport BSW Port Identifier. This parameter is available starting in Release 1. This parameter is only allowed with an I/O shelf AID, or with a slot AID and a SWIF circuit pack type. If the aid is a SWIF circuit pack AID, this parameter is required. Values: 1-12 (for 1152 switches) or 1-48 (for 4608 switches). oncpi ON Cable Pair Identifier. This parameter is available starting in Release 1. This parameter is only allowed with an I/O shelf AID. Values: 1-48 shlftp Shelf Type. This parameter is available starting in Release 2. This parameter is required when the aid is an I/O shelf AID. Values: TYPE2GIO TYPE10GIO. Starting with Release 3.1, the values are: TYPE2GDEIO - For a 2.5G DS3EC1 I/O shelf TYPE2GSEIO - For a 2.5G STM1EE4 I/O shelf TYPE10GIO - For a 10G I/O shelf.

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 3-50. Circuit Pack Table (cont 1 of 2)

Circuit Pack Name	Circuit Pack Qualifier
	BSW
	CSIEX
	SWIEX
	SWIF
	TB
ADJCTL	DCC
ADJCTL	DCCEI
CTL	EI
CTL	MEM
CTL	SR50DC
CTL	SYS50CM
CTL	SYS50D
CTL	SYS50DM
DS3EC1	8
OBA10G	15LR1
OBPA10G	15VR1
OC3STM1	13LR4
OC3STM1	13SR4
OC12STM4	13LR2
OC12STM4	15LR2
OC12STM4	13SR2
OC48STM16	13LR1
OC48STM16	15LR1
OC48STM16	DWDM01,DWDM02, ..., DWDM16

Table 3-50. Circuit Pack Table (cont 2 of 2)

Circuit Pack Name	Circuit Pack Qualifier
OC48STM16	POU9590, POU9570, ..., POU9210
OC48STM16	WDM9585, WDM9580, ..., WDM9190
OC192STM64	15IR1
OC192STM64	15IRA1
OC192STM64	15IRS1
OC192STM64	15LR2
OC192STM64	15SR1
OC192STM64	ARM9580, ARM9570, ..., ARM9190
OC192STM64	POU9580, POU9570, ..., POU9210
OC192STM64	WDM9580, WDM9570, ..., WDM9190
PP192	FO
PPROC	STS192
PPROC	STS384
STM1E	4
STM1EE4	4
SWITCH	DS3EC1
SWITCH	STM1E4
SWITCH	STM1EE4
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 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 apply to the **ENT -EQPT** command.

RELATED TL1 MESSAGES

DLT -EQPT

ED -EQPT

ED -STATE -EQPT

RTRV -EQPT

RTRV -STATE -EQPT

NAME

ENT - FECOM: Enter Far-End Communications

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 1.0, the syntax is:

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

Starting in Release 3, 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 3-51. ENT - FECOM Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. This identifies the DCC circuit pack address. Value: circuit pack AID. See the AID table in OSEG Appendix A.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>port</i>	Port. This parameter is available starting in Release 1. This parameter indicates the optical (OC-N) port AID that would be using a channel of the DCC circuit pack for far-end communications. Value: Optical (OC-N) port AIDs.
<i>dcctype</i>	This parameter is available starting in Release 3. This parameter specifies whether the values provisioned in the <i>spec_block</i> refer to the LINE or SECTION dcc. Values: ■ SECTION (default) ■ LINE.
<i>spec_block</i>	Any parameter that is not listed in the <i>spec_block</i> of the command line will keep its current value. Except that if a DCC is being enabled, all LAPD parameters not explicitly set in the command line will be provisioned to initial values. dccstat This parameter is available starting in Release 1. This parameter enables or disables communication over the section DCC channel. Values: ■ ENABLE ■ DISABLE (initial value). Prior to Release 3.0, the initial value was ENABLE if the number of active DCCs was less than the maximum allowed.

Table 3-51. ENT - FECOM Input Parameters (cont 2 of 2)

Parameter Name	Description
	<i>lapdrl</i> This parameter indicates the LAPD Role. When the value is the same on both ends, an alarm will be active. Values: ■ USER-SIDE (initial value) ■ NETWORK-SIDE. Starting in Release 1, this parameter is available for the Section DCC. Starting in Release 3, this parameter is available for the Line DCC. <i>l2wait</i> This parameter sets the LAPD retransmission timer, T200. When this timer expires, retransmission of the frame is initiated. Values: 0.2-25 seconds in 100 msec increments. The initial value is 1 second. Starting in Release 3.1, this parameter is available for the Section DCC. Starting in Release 3.1, this parameter is available for the Line DCC. <i>l2rex</i> This parameter sets the LAPD maximum number of retransmissions, N200, allowed. Values: 1 - 16 in increments of 1. The initial value is 3. Starting in Release 3.1, this parameter is available for the Section DCC. Starting in Release 3.1, this parameter is available for the Line DCC. <i>l2if</i> This parameter sets the LAPD transmission window parameter, K. K corresponds to the maximum number of outstanding information frames allowed before expecting an acknowledgment. Values: 1 - 127 in increments of 1. The initial value is 7. Starting in Release 3.1, this parameter is available for the Section DCC. Starting in Release 3.1, this parameter is available for the Line DCC.

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:lapdr1=  
network-side;  
  
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 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

Beginning with Release 3.0, 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 3-52. ENT - FECOM - LAN Input Parameters (cont 1 of 4)

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

Table 3-52. ENT - FECOM - LAN Input Parameters (cont 2 of 4)

Parameter Name	Description
<i>aid</i>	Access Identifier. This parameter is applicable starting in Release 1. This identifies the LAN circuit pack address. Value: circuit pack AID. See the AID table in OSEG Appendix A. If an EQPTDCC protection group exists, the AID of the second DCC circuit pack is an alias for the first DCC circuit pack. There is only one OSI stack for both packs; so, the AID of either circuit pack can be used to provision the parameters. But the REPT DBCHG message and the RTRV - FECOM - LAN command will use only the AID of the first DCC circuit pack. It is, therefore, recommended that operations systems only use the AID of the first DCC circuit pack.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	extllm This parameter is applicable starting in Release 3.1. External LAN Max Link Metric. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63 The initial value is 14. intllm This parameter is applicable starting in Release 3.1. Internal LAN Max Link Metric. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63 The initial value is 14. lanstat This parameter is applicable starting in Release 1. This parameter indicates whether communication over the external IAO-LAN channel is enabled or disabled. Values: ■ ENABLE (default) ■ DISABLE.

Table 3-52. ENT - FECOM - LAN Input Parameters (cont 3 of 4)

Parameter Name	Description
	<i>intlanstat</i> This parameter is applicable starting in Release 3.1. This parameter indicates whether communication over the internal LAN channel is enabled or disabled. Note that, if this parameter is disabled, it could cause all external management communications to the network element to be lost. Values: ■ ENABLE (default) ■ DISABLE. 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 an I/O shelf. <i>lanrst</i> LAN Reset. This parameter is applicable starting in Release 1. This parameter will reset the LAN hardware without resetting the OSI stack or the system and without affecting communications. Values: ■ YES ■ NO (default). <i>lanrpri</i> LAN Designated Router Priority. This parameter is available starting in Release 3.1. 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. <i>extltss</i> External LAN TARP Storm Suppression. This parameter is available starting in Release 3.1. Modification of this parameter causes a communications software reset. Values: ■ ENABLE ■ DISABLE (initial value).

Table 3-52. ENT - FECOM - LAN Input Parameters (cont 4 of 4)

Parameter Name	Description
	intltss Internal LAN TARP Storm Suppression. This parameter is available starting in Release 3.1. Modification of this parameter causes a communications software reset. Values: ■ ENABLE ■ DISABLE (initial value).

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 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 apply to the **ENT-FECOM-LAN** command.

RELATED TL1 MESSAGES

RTRV-FECOM-LAN

NAME

ENT - PROTN - GRP: Enter Protection Group

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

ENT - PROTN - GRP: *tid::ctag::prototype: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 or reservations 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 stm1ee4grp.
- **EQPTIOFBR**
I/O fabric protection. This is only for the BWM. The protection group AID for this protection type is eswitchgrp which refers to the switch/576 plus the swifnn circuit packs.
- **EQPTSWFBR**
Switch fabric protection. Protection group AIDs for this protection type include ebswgrp[01-16] for the BWM BSW packs and esysswitchgrp for 2.5G/10G switch packs.
- **EQPTTMG**
Timing equipment protection
- **EQPTCTL**
Controller equipment protection. The protection group AIDs for this protection type is esysctlgrp. It does not include ememgrp since the user has no control over memory pack selection.
- **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 3-53. ENT - PROTN - GRP Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>protype</i>	Protection Type. Values: ■ 1+1 (starting in Release 1.2) 1+1 is for optical protection. ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1) ■ EQPTDCC (starting in Release 3.1)
<i>spec_block</i>	See the following “ ENT - PROTN - GRP spec_block Parameters” table.

Table 3-54. ENT - PROTN - GRP spec_block Parameters (cont 1 of 3)

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

Table 3-54. ENT-PROTN-GRP *spec_block* Parameters (cont 2 of 3)

Parameter	Description / PROTYPE	Value
<i>east</i>	East Group Member. This parameter is required when <i>protype</i> has one of the following values; otherwise, this parameter is not allowed. ■ 2F (starting in Release 2)	port AID
<i>eastprotn</i>	East Protection Group Member. This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1.1)	If the value is omitted, then the group member will be unsigned. port AID
<i>eastwkg</i>	East Working Group Member. This parameter helps to determine whether the protection group operates in 2-port mode or 4-port mode. 4-port mode is obtained by specifying <i>eastwkg</i> , <i>eastprotn</i> , <i>westwkg</i> , <i>westprotn</i> . 2-port mode is obtained by specifying <i>eastwkg</i> , <i>eastprotn</i> or <i>westwkg</i> , <i>westprotn</i> . This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1.1)	If the value is omitted, then the group member will be unsigned. port AID
<i>pgid</i>	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
<i>protn</i>	Protection Group Member. This parameter is required when <i>protype</i> has one of the following values; otherwise, this parameter is not allowed. ■ 1+1 (starting in Release 1.2)	port AID
<i>protocol</i>	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. ■ 1+1 (starting in Release 3)	1+1_UNI, 1+1_BIDIR

Table 3-54. ENT - PROTN - GRP *spec_block* Parameters (cont 3 of 3)

Parameter	Description / PROTYPE	Value
<i>rid</i>	Ring Identification Name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding protection group is case insensitive. This parameter is only allowed when <i>prototype</i> has one of the following values: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1) Starting in Release 3.0	ASCII string of up to 15 characters from the TID character set ASCII string of up to 15 characters from the TID character set 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).
<i>west</i>	West Group Member	See <i>east</i>
<i>westprotn</i>	West Protection Group Member	See <i>eastprotn</i>
<i>westwkg</i>	West Working Group Member	See <i>eastwkg</i>
<i>wkg</i>	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 <i>wkg</i>, <i>protn</i> is to delete the protection group and then reprovision. This parameter is required when <i>prototype</i> has one of the following values; otherwise, this parameter is not allowed. ■ 1+1 (starting in Release 1.2)	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 98-01-01 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 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 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 */
;
```

The following condition will cause an IDNV error response :

- Both an AID and an RID are specified as input parameters and they are inconsistent.

RELATED TL1 MESSAGES

DLT - PROTN - GRP

ED - PROTN - GRP

RTRV - PROTN - GRP

ED - PROTN - TYPE

RTRV - PROTN - TYPE

NAME

ENT-ROLL: Enter Roll

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

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

3.

INPUT FORMAT

ENT-ROLL-*modifier*:*tid*:*in_aid*,*out_aid*:*ctag*:::*spec_block*;

DESCRIPTION

The **ENT-ROLL** command can be initiated by a user to roll the input of an existing leg of a cross-connection from a given tributary to another tributary, while leaving the output unchanged.

The *modifier* in the **ENT-ROLL** command indicates the rate on which the **ENT-ROLL** command acts.

The number of cross-connections originating from the same tributary is restricted to two. The tributary to which the roll cross-connection is intended may have to be free from any of the following failure/alarm conditions: AIS-P, LOP-P, UNEQ, B3 signal degrade and J1 mismatches.

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

INPUT PARAMETERS

Table 3-55. ENT - ROLL Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the enter roll command is to act on. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>in_aid</i>	Input Access Identifier. See the AID table in OSEG Appendix A. Values: tributary AID.
<i>out_aid</i>	Output Access Identifier. See the AID table in OSEG Appendix A. Values: tributary AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	<i>newinaid</i> Specifies the new input tributary AID to which the cross-connection has to be rolled from its existing input AID. Values: tributary AID. <i>newloca</i> Specifies the new source TID if the <i>newinaid</i> 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 3.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).

Table 3-55. ENT-ROLL Input Parameters (cont 2 of 2)

Parameter Name	Description
	<i>xcappl</i> 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 <i>xcnum</i> 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 <i>out_aid</i>): 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 98-01-01 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 98-01-01 08:00:00
M 123456 COMPLD
;
```

The following example shows a successful completion of an **ENT-ROLL** command. In this example, an existing cross-connection is being rolled to a tributary that is in a BLSR protection group:

```
ENT-ROLL-VC3:LT-WBM-789:4-2-#-#-02-1-1,4-2-#-#-06-1-1:123456::NEWINAI
D=5-1-#-#-2-2-1, NEWLOCA=LT-WBM-456;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
;
```

The following example shows a successful completion of an **ENT-ROLL** command of a non-BLSR connection:

```
ENT-ROLL-VC3:LT-WBM-789:2-1-#-#-14-2,1-1-#-#-1-13-1:123456::NEWINAID=
5-1-#-#-2-2-1;

LT-WBM-789 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 apply to the **ENT-ROLL** command. The following additional error responses are also applicable.

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.

RELATED TL1 MESSAGES

ED-EQPT

ED - CRS

ENT - CRS

ENT - EQPT

NAME

ENT - RSVN: Enter Reservation

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P3

COMMAND PRIORITY

1.

INPUT FORMAT

ENT - RSVN-*modifier*:*tid*:*aid*:*ctag*[*:::spec_block*];

DESCRIPTION

The **ENT - RSVN** command can be initiated by a user to establish a reservation on a tributaries on any transmission interface in the network element. A reservation places limitations on any future cross connections for the reserved tributaries:

- through cross connections are not allowed
- path protected cross connections are not allowed
- adjunct path protected cross-connections are not allowed
- the source TID must be identical to the existing reservation (the tid can be omitted in the **ENT - CRS** command if there is a reservation)
- the rate of a cross connection cannot exceed the rate of the reservation.

The **ED - RSVN** command can be used to modify a reservation's TID. Other incompatibilities require using the **DLT - RSVN** command. Establishing cross-connections does not delete any corresponding reservations. **RTRV - RSVN** can be used to indicate what reservations exist. A reservation is not allowed if the tributary has an existing reservation or an existing cross-connection.

The *modifier* in the **ENT - RSVN** command indicates the rate on which the **ENT - RSVN** command is going to act. The network element accepts **ENT - RSVN** command requesting reservations to the protection tributaries of a BLSR. A reservation to a DS3 port is allowed only if the port directionality parameter of that port is set to 'bidirectional.' A reservation to a DS3 port is denied if the port directionality is set to 'unidirectional transmit' or 'unidirectional receive.'

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

INPUT PARAMETERS

Table 3-56. ENT - RSVN Input Parameters

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the establish reservation command is to act on. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A).
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	<i>node</i> Specifies the new <i>tid</i> of the node that provides the BLSR connection. This parameter is omitted for non-BLSR connections. Value: See <i>tid</i> in the RTRV - HDR command. Starting in Release 3.0, 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).

OUTPUT FORMAT

If the **ENT - RSVN** 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 an **ENT - RSVN** command by the network element for an STS1 BLSR connection:

```
ENT-RSVN-STS1:LT-WBM-789:1-1-#-#-02-1-1:123456:::NODE=LT-WBM-456;  
LT-WBM-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows the successful completion of **ENT - RSVN** by the network element for an STS1 non-BLSR connection:

```
ENT-RSVN-STS1:LT-WBM-789:1-1-#-#-08-1-1:123456;  
LT-WBM-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows the successful completion of an **ENT-RSVN** command by the network element for a VC3 BLSR connection:

```
ENT-RSVN-VC3:LT-WBM-789:1-1-#-#-02-1-1:123456:::NODE=LT-WBM-456;  
LT-WBM-789 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows the successful completion of **ENT-RSVN** by the network element for a VC3 non-BLSR connection:

```
ENT-RSVN-VC3:LT-WBM-789:1-1-#-#-08-1-1:123456;  
LT-WBM-789 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 apply to the **ENT-RSVN** command.

RELATED TL1 MESSAGES

DLT-RSVN

ED-RSVN

RTRV-RSVN

NAME

ENT - TCA - PROF: Enter TCA Profile

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

- WaveStar BandWidth Manager, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM3

COMMAND PRIORITY

- 1.

INPUT FORMAT

ENT - TCA - PROF: *tid::ctag::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.

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 (**pfname**) 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 3-57. ENT - TCA - PROF Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>pftype</i>	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ PHYSICAL ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC
<i>pfname</i>	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 system supports two default sets of profiles called "Default" and "Default0." Default contains non-zero threshold value for each parameter in the profile, and Default0 contains zero threshold value for each parameter in the profile. To see all the default values, refer to the RTRV - TCA - PROF command.

OUTPUT FORMAT

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

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

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

```
ENT-TCA-PROF:LT-WBM::123456::path,gte;  
LT-WBM 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 apply to the **ENT - TCA - PROF** command.

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 BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

- 1.

INPUT FORMAT

ENT - ULS: *tid:aid:ctag::type:spec_block;*

DESCRIPTION

The **ENT - ULS** command is used to provision the user-settable parameters in the upper layer OSI stack. The parameters include user-settable fields of the Registration Manager (RM). RM provisioning includes setting the Network Service Access Point (NSAP) of the Directory System Agent (DSA) address and the name prefix parameters. 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 **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 3-58. ENT - ULS Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	This parameter is available starting in Release 1.2. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>type</i>	This parameter determines that the Registration Manager fields will be provisioned by the ENT - ULS command. Values: ■ RM .
<i>spec_block</i>	rm Registration Manager. This parameter is available starting in Release 1.2. This parameter belongs to RM type. The Registration Manager helps new NEs in a Level 1 OSI area register themselves in the appropriate directory, which may be on this network element or may be on a remote network element. Values: ■ ENABLE ■ DISABLE (initial value). If the value is omitted, the current value is not modified. The Registration Manager can only be enabled on the subrack shelves of the Wavestar Bandwidth Manager. dsa_nsap DSA NSAP Address. This parameter is available starting in Release 1.2. This parameter belongs to RM type. It is characterized by its NSAP address. This is the only provisionable field of the DSA address. Value: A string of 20-byte (40-digit hex) NSAP address. Initial value: NSAP address of the local system. dsaip DSA IP Address. This parameter is available starting in Release 2. This parameter belongs to RM type. This is a 32-bit IPv4 address. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255. Entering two double quotes ("") for the value will remove this parameter.

Table 3-58. ENT - ULS Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>np_co</i>	Name Prefix Country. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the country field of the name prefix parameter. It indicates the highest level of the directory tree. This parameter is required and must be provisioned first before any of the other three name prefix parameters are provisioned. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. Value: Consists of 2 alphanumeric characters.
<i>np_org</i>	Name Prefix Organization. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the organization field of the name prefix parameter. Its level is just below country in the directory tree. This parameter is required and must be provisioned along with country. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. Value: Consists of 1 to 64 alphanumeric characters.
<i>np_orgu1</i>	Name Prefix Organization Unit 1. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the organization unit one of the name prefix parameter. Its level is just below organization in the directory tree. This parameter is optional. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. Entering the value " " will remove a provisioned value of this field from the name prefix address. Value: Consists of 1 to 64 alphanumeric characters.
<i>np_orgu2</i>	Name Prefix Organization Unit 2. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the organization unit two of the name prefix parameter. Its level is just below organization unit one in the directory tree. This parameter is optional, but if it is provisioned, then organization unit one parameter must be provisioned as well. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. Entering the value " " will remove a provisioned value of this field from the name prefix address. Value: Consists of 1 to 64 alphanumeric characters.

OUTPUT FORMAT

If the **ENT-ULS** request is successful, then the network element returns the following normal completion response:

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

OUTPUT PARAMETERS

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

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **ENT-ULS** command by the network element:

```
ENT-ULS:LT-WBM::123456::RM:dsa_nsap=39840F8000000007AE0000000001234567
8901200,np_co=us,np_org=abcd1234;

LT-WBM 98-01-01 08:00:00
M 123456 COMPLD
;
```

This is another example:

```
ENT-ULS:LT-WBM::123456::IP:ip_ad=198.78.46.8,ip_snm=255.255.255.128,
ip_drad=198.84.65.20;

LT-WBM 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 apply to the **ENT-ULS** command.

RELATED TL1 MESSAGES

ENT - ULSDCC - L3

ENT - ULSDCC - L4

RTRV - ULSDCC - L3

RTRV - ULSDCC - L4

DLT - ULSDCC - L4

RTRV - ULS

NAME

ENT - ULSDCC - L3: Enter Upper Layer Stack DCC Layer 3

The **ENT - ULSDCC - L3** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

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 3-59. 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 3-60. ENT - ULSDCC - L3 Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting with Release 1. See the AID table in OSEG Appendix A. Value: datacom AID (DCC circuit pack AID). If an EQPTDCC protection group exists, the AID of the second DCC circuit pack is an alias for the first DCC circuit pack. There is only one OSI stack for both packs; so, the AID of either circuit pack can be used to provision the parameters. But the REPT DBCHG message and the RTRV - ULSDCC - L3 command will use only the AID of the first DCC circuit pack. It is, therefore, recommended that operations systems only use the AID of the first DCC circuit pack.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	I3afi NSAP Authority and Format Identifier. This parameter is available starting with Release 3.1. Modification of this parameter causes a communications software reset. This is a 1 octet (2-digit hexadecimal) field to specify the format for the rest of the address. The initial value is 39 hex, which identifies the iso_dcc format. I3idi NSAP Initial Domain Identifier. This parameter is available starting with Release 3.1. Modification of this parameter causes a communications software reset. This is a 2 octet (4-digit hexadecimal) field to specify the country code indicating the registration authority responsible for the allocation and assignment of the NSAP address. The initial value is 0000 hex, which identifies the global registration authority.

Table 3-60. ENT-ULSDCC-L3 Input Parameters (cont 2 of 3)

Parameter Name	Description
<i>l3dfi</i>	NSAP DSP (Domain Specific Part) Format Identifier. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 1 octet (2-digit hexadecimal) field to specify the format for the rest of the address. The initial value is 80 hex, which identifies the SONET DSP format.
<i>l3org</i>	NSAP Organization Identifier Field. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 3 octet (6-digit hexadecimal) field used to provision into the NSAP address the allocated Company Code. The initial value for this parameter is 000000 hex.
<i>l3res</i>	NSAP Reserved Field. This parameter is available starting with Release 1. Modification of this parameter causes a communications software reset. This is a 2 octet (4-digit hexadecimal) field that currently has not been assigned a specific purpose by the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. The initial value for this parameter is 0000 hex.
<i>l3rd</i>	NSAP Routing Domain. This parameter is available starting with Release 1. This NSAP field identifies a unique Routing Domain within an administrative domain. Standard use of this parameter has not been defined in the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. Modification of this parameter causes a communications software reset. This parameter has a 2 octet (4-digit hexadecimal) value with the initial value of 0000 hex.

Table 3-60. ENT-ULSDCC-L3 Input Parameters (cont 3 of 3)

Parameter Name	Description
	<i>l3area</i> NSAP Area Identifier Field. This parameter is available starting with Release 1. This field identifies the area within the Routing Domain to which the NSAP address belongs. Modification of this parameter causes a communications software reset. This parameter has a 2 octet (4-digit hexadecimal) value with the initial value of 0000 hex. <i>l3lv2is</i> This parameter is available starting in Release 1.2. This parameter enables or disables the network element specified by the <i>tid</i> 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. <i>l3isct</i> Intermediate System Configuration Timer. This parameter is available starting with Release 1. This field is used when the network element is acting in the Intermediate System role. Values: 10-1000 seconds. The initial value is 10 seconds. <i>l3lc</i> CLNP Lifetime Control parameter. This parameter is available starting with Release 2. 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.

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 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 apply to the **ENT-ULSDCC-L3** command.

RELATED TL1 MESSAGES

ENT-ULSDCC-L4

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

DLT-ULSDCC-L4

NAME

ENT - ULSDCC - L4: Enter Upper Layer Stack DCC Layer 4

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

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 3-61. ENT - ULSDCC - L4 Input Parameters (cont 1 of 6)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A. If an EQPTDCC protection group exists, the AID of the second DCC circuit pack is an alias for the first DCC circuit pack. There is only one OSI stack for both packs; so, the AID of either circuit pack can be used to provision the parameters. But the REPT DBCHG message and the RTRV - ULSDCC - L4 command will use only the AID of the first DCC circuit pack. It is, therefore, recommended that operations systems only use the AID of the first DCC circuit pack.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
	14ajdfi NSAP DSP (Domain Specific Part) Format Identifier of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 1 octet (2-digit hex) field to specify the format for the rest of the address. The initial value is 80 hex. 14ajorg NSAP Organization Identifier field of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 3 octet (6-digit hex) field used to provision into the NSAP address the allocated Company Code. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. This is a required field when TARP Manual Adjacencies are being provisioned. 14ajres NSAP Reserved field of the TARP adjacent network element. This parameter is available starting in Release 1. This is a 2 octet (4-digit hex) field that currently has not been assigned a specific purpose by the standards. The initial value for this parameter is an empty value; that is, it has no value until provisioned by the user. This is a required field when TARP Manual Adjacencies are being provisioned.

Table 3-61. ENT-ULSDCC-L4 Input Parameters (cont 2 of 6)

Parameter Name	Description
	<i>l4ajrd</i> NSAP Routing Domain field of the TARP adjacent network element. This parameter is available starting in Release 1. This NSAP field identifies a unique Routing Domain within an administrative domain. Standard use of this parameter has not been defined in the standards. This 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. <i>l4ajarea</i> NSAP Area Identifier field of the TARP adjacent network element. This parameter is available starting in Release 1. This field identifies the Area within the Routing Domain to which the NSAP address belongs. This parameter has a 2 octet (4-digit hexadecimal) value with the initial value of an empty value; that is, it has no value until provisioned by the user. This is a required field when TARP Manual Adjacencies are being provisioned. <i>l4ajsys</i> NSAP System Identification field of the TARP adjacent network element. This parameter is available starting in Release 1. This parameter must be specified for the TARP Manual Adjacency to be entered. It is a 6 octet (12-digit hex) NSAP System Identifier field. This is a required field when TARP Manual Adjacencies are being provisioned. <i>l4lftm</i> This parameter is used to provision the TARP Loop Detection Buffer Flush Timer. This parameter is available starting in Release 1. It sets the time period for flushing the TARP Loop Detection Buffer. Values: 1-1440 minutes. The initial value is 5 minutes. <i>l4letm</i> This parameter is used to provision the TARP Loop Detection Buffer Entry Timer. This parameter is available starting in Release 1. It sets the LDB time period for discarding TARP PDUs after a TARP PDU has been received with a sequence number equal to zero. Values: 1-10 minutes. The initial value is 5 minutes.

Table 3-61. ENT - ULSDCC - L4 Input Parameters (cont 3 of 6)

Parameter Name	Description
	<i>l4etof</i> This parameter is used to enable or disable TARP Origination Functions only. This parameter is available starting in Release 1.2. Changing this parameter will result in a communications software reset. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE. <i>l4etpf</i> This parameter is used to enable or disable TARP Propagation Functions only. This parameter is available starting in Release 1. Changing this parameter will result in a communications software reset. Values: ■ ENABLE ■ DISABLE. The initial value is ENABLE. <i>l4etrf</i> This parameter is used to enable or disable TARP Responder Functions only. This parameter is available starting in Release 1. Changing this parameter will result in a communications software reset. Values: ■ ENABLE ■ DISABLE. The initial value is ENABLE. For the subrack shelves, the initial value is DISABLE. <i>l4tlif</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Lifetime field when the system, identified by the <i>tid</i>, originates a TARP PDU. It specifies the maximum number of hops allowed for a TARP PDU. If this value is exceeded, the TARP PDU will not be forwarded. Values: 1 - 65535. The initial value is 100 hops.

Table 3-61. ENT - ULSDCC - L4 Input Parameters (cont 4 of 6)

Parameter Name	Description
	<i>l4t1tm</i> This parameter sets the TARP Timer T1. This parameter is available starting in Release 1.2. T1 is the maximum time allowed for response to TARP TYPE1 request PDU (search level 1 routing area). Values: 1- 3600. The initial value is 15 seconds. <i>l4t2tm</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Timer T2. T2 is the maximum time allowed for response to TARP TYPE2 request PDU (search outside of the level 1 area). Values: 1- 3600. The initial value is 25 seconds. <i>l4t3tm</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Timer T3. T3 is the maximum time allowed for response to TARP TYPE5 request PDU (requesting the TID when the NSAP address is known). Values: 1- 3600. The initial value is 40 seconds. <i>l4t4tm</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Timer T4. Timer T4 starts when T2 expires. It is used for error recovery. Values: 1- 3600. The initial value is 20 seconds. <i>l4etdc</i> This parameter is available starting in Release 1.2. This parameter is used to enable or disable the TARP Data Cache. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE.

Table 3-61. ENT - ULSDCC - L4 Input Parameters (cont 5 of 6)

Parameter Name	Description
	<i>l4etclp</i> This parameter is available starting in Release 1.2. 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 <i>l4clim</i> and <i>l4cint</i>. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE. <i>l4clim</i> This parameter is available starting in Release 1.2. This parameter sets the TARP clipping limit. It specifies the maximum number of PDUs which can be forwarded in the interval <i>l4cint</i> seconds. Values: 10 - 2550 PDUs in 10 PDU increments. The initial value is 240 PDUs. <i>l4cint</i> This parameter is available starting in Release 1.2. This parameter sets the TARP clipping interval. Its value determines the time period in which the maximum number of PDUs, <i>l4clim</i>, can be forwarded before activating the clipping function. Values: 1 - 255 seconds in 1 second increments. The initial value is 12 seconds. <i>l4et5gw</i> This parameter is available starting in Release 1.2. This parameter is used to enable or disable the TARP/X.500 gateway (T5GW) function. The TARP origination function, <i>l4etof</i>, must be enabled to enable the gateway function. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE. <i>l4tme</i> This parameter is available starting in Release 1.2. This parameter sets the discovery timer, Timer E, which determines the frequency at which the T5GW invokes the discovery process. This timer is initiated when the T5GW is enabled or when the current timer expires. Values: 10 - 2550 minutes in 10-minute increments. The initial value is 20 minutes.

Table 3-61. ENT - ULSDCC - L4 Input Parameters (cont 6 of 6)

Parameter Name	Description
	<i>l4tmf</i> This parameter is available starting in Release 1.2. This parameter sets the anti-flooding timer, Timer F, which is used to prevent flooding the network with TYPE5 PDUs and their TYPE3 responses during the T5GW discovery process. Values: 1.0 - 60.0 seconds in 0.5-second increments. The initial value is 1 second. <i>l4wintm</i> This parameter is available starting in Release 3.1. This parameter sets the maximum time to wait before retransmitting window information, W. Values: 1 - 255 seconds in 1-second increments. The initial value is 16 seconds. <i>l4crdt</i> This parameter is available starting in Release 3.1. This parameter sets the transport credit parameter, the maximum number of outstanding unacknowledged transport PDUs allowed. Changing this parameter will result in a communications software reset. Values: 1 - 15 PDUs in increments of 1 PDU. The initial value is 5 PDUs.

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 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 apply to the **ENT - ULSDCC - L4** command.

RELATED TL1 MESSAGES

ENT - ULSDCC - L3

DLT - ULSDCC - L4

RTRV - ULSDCC - L3

RTRV - ULSDCC - L4

NAME

ENT-USER-SECU: Enter User Security

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S5

COMMAND PRIORITY

- 1.

INPUT FORMAT

Starting in Release 1.0, the syntax is:

ENT-USER-SECU: *tid:uid:ctag::pid, , [upc]:[spec_block];*

DESCRIPTION

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

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

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

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

INPUT PARAMETERS

Table 3-62. ENT - USER - SECU Input Parameters (cont 1 of 4)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	Specifies the new user ID (<i>uid</i>) name. Refer to the ACT - USER command.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>pid</i>	Specifies the password ID for the <i>uid</i> . Refer to the ACT - USER command.
<i>upc</i>	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 <i>upc</i> parameter is a list of these category/level pairs. If the <i>upc</i> 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: Pi, Mi, Ti, Si, PMi, Di 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 1.2, the value of i is 0 (low) to 5 (high), except for the S category, which only supports levels 1 to 5. If an authorization level is set to 0, the user will have no privileges for that functional category. In other words, an authorization level of 0 disables that functional category for that user. The initial authorization level is 1 for all functional categories, except for the D category, which has an initial level of 0.

Table 3-62. ENT-USER-SECU Input Parameters (cont 2 of 4)

Parameter Name	Description
	<u>Note:</u> 'Di' is a Lucent-only category which can only be used with a special password. uids with Di 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.
<i>spec_block</i>	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. 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 (&). 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, then NE will disregard the other values.

Table 3-62. ENT - USER - SECU Input Parameters (cont 3 of 4)

Parameter Name	Description
	■ OWN Responses to the user's own commands (initial value). User will receive no other notifications. Starting with Release 1.3, if OWN is specified, no other values should be specified. If OWN is specified together with other values, the value OWN will be disregarded. page Password Aging Interval. This parameter is available starting in Release 3. 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. tmout Inactivity Timeout Period. This parameter is available starting in Release 3. If there are no messages between the user and the NE over the Timeout Period, the session is logged off. A value of 0 disables the timeout function. The initial value is 30 minutes. If the parameter is not specified, it retains its current value. Values: ■ 0-999 minutes. uidclass UID Class. This parameter is available starting in Release 2. This is the user class of a uid. Values: ■ MEMADMIN The user is a memory administration operations system. If uidclass is set to MEMADMIN, the value of screen can only be set to NA. ■ OTHER This is the initial value.

Table 3-62. ENT-USER-SECU Input Parameters (cont 4 of 4)

Parameter Name	Description
	<i>initobs</i> Initialization observability. This parameter is available starting in Release 1.3. 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.

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 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 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

INH-ALM: *tid::ctag*;

DESCRIPTION

The **INH-ALM** command can be initiated by users to inhibit the office audible and visual alarms. The alarms can be enabled via the **ALW-ALM** command. The original state is “office alarm enable.”

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

INPUT PARAMETERS

Table 3-63. INH-ALM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for input parameters syntax and description of this parameter.
<i>ctag</i>	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 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 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 BandWidth Manager, Release 3.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

- 1.

INPUT FORMAT

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

DESCRIPTION

The **INH-MSG** command instructs the NE to inhibit the forwarding of autonomous messages on the user session. If the user is logged in more than once, only the current login session is affected.

The initial state of the user session is to allow all autonomous messages with which the user login was provisioned. If the **INH-MSG** command inhibits autonomous messages that have already been suspended, it will complete successfully.

For Memory Administration users, when autonomous messages are inhibited, the internal atag sequence number will continue to increment for the suppressed autonomous messages.

Also, the internal buffering of autonomous messages for retrieval by **RTRV-A0** 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 3-64. INH-MSG Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	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 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 apply to the **INH-MSG** command.

RELATED TL1 MESSAGES

ALW-MSG

ED-USER-SECU

RTRV-A0

RTRV-ATTR-MSG

NAME

INIT-REG: Initialize Register

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

- WaveStar BandWidth Manager, Release 1.2

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 3-65. INIT-REG Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the port type or tributary signal type on which the init register command is to act on. Values: ■ T3 ■ EC1 ■ OC3

Table 3-65. INIT-REG Input Parameters (cont 2 of 3)

Parameter Name	Description
	■ OC12 ■ OC48 ■ OC192 ■ STS1 ■ STS3C ■ STS12C ■ STS48C ■ STM1 ■ STM4 ■ STM16 ■ STM64 ■ VC3 ■ VC4 ■ VC44C
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Values: port/tributary AID (see the AID table in OSEG Appendix A). Range is supported up to the shelf level.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	<i>parm</i> Parameter. This determines the type of PM register that is requested to be initialized. Values: ■ ALL (default). ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC

Table 3-65. INIT - REG Input Parameters (cont 3 of 3)

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 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 apply to the **INIT-REG** command.

RELATED TL1 MESSAGES

RTRV-PM

NAME

INIT-SYS: Initialize System

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

- WaveStar BandWidth Manager, Release 1.2

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 generates a **REPT DBCHG** message. There are no unique state change notifications associated with the **INIT-SYS** command. There are, however, all the state change notifications associated with the subsequent restart. This includes multiple state change messages. For example, there will be 2 operational state change notifications for each reset controller (one transition to disabled, one transition back to enabled).

INPUT PARAMETERS

Table 3-66. INIT-SYS Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for input parameters syntax and description of this parameter.
<i>ctag</i>	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 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 apply to **INIT-SYS** command.

RELATED TL1 MESSAGES

RTRV-HDR

NAME

OPR-LPBK: Operate Loopback

The **OPR-LPBK** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

- 1.

INPUT FORMAT

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

DESCRIPTION

The **OPR-LPBK** command can be initiated by a user to initiate a loopback on an interface/tributary in the network element.

The *modifier* in the **OPR-LPBK** command indicates the rate of the tributary on which the **OPR-LPBK** command is going to act. An **OPR-LPBK** command requesting a cross-connect loopback on a tributary requires a *modifier*. A facility loopback request operates on a facility interface indicated by the *aid*; therefore, the *modifier* is not required.

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 3-67. OPR-LPBK Input Parameters

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the operate loopback command is to act on. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> 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.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>lpbktyp</i>	This parameter indicates the type of loopback to be operated. Values: ■ CRS Cross-connect loopback (default).
<i>spec_block</i>	<i>cmdmde</i> 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 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows the successful completion of an **OPR-LPBK** command requesting an VC3 cross-connect loopback with forced command execution mode:

```
OPR-LPBK-VC3:LT-WBM-789:1-1-#-#-4-1-1:123456::,,CRS:CMDMDE=FRCD;  
LT-WBM 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 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

- 1.

INPUT FORMAT

OPR-PROTNSW: *tid:[aid]:ctag::prototype,[rid]:spec_block;*

Starting in Release 3.1, **OPR-PROTNSW** has the following input format:

OPR-PROTNSW: *tid:[aid]:ctag::prototype,[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 3-68. *ppgname* and destination usage for PATHDRI

protection grp type	command target id		destination		comment
	<i>aid</i>	path protection group name	<i>dest</i> (note 2)	<i>destaid</i> (note 2)	
PATHDRI	not used	<i>ppgname</i>	WKG or PROTN	grp member (input) logical tributary AID	operation applies to all tributaries that are group members of the <i>ppgname</i> (note 1)
PATHDRI	grp member (input) logical tributary AID	<i>ppgname</i>	WKG or PROTN	grp member (input) logical tributary AID	operation applies to all tributaries that are group members of the <i>aid</i> , <i>ppgname</i> subset (note 1, note 3)
PATHDRI	path prot grp id (output log- ical 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, <i>destaid</i> 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.					

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

INPUT PARAMETERS

Table 3-69. OPR - PROTNSW Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. If <i>rid</i> is specified, then <i>aid</i> can be omitted. If <i>ppgname</i> is specified, then <i>aid</i> can be omitted for a PATHDRI protection type. For each protection group type, <i>aid</i> can be a protection group AID. See <i>protype</i> for a list of the protection group types. For the BSW group, the ebswgrpall <i>aid</i> is allowed. For some protection groups, <i>aid</i> is not constrained to be a protection group AID. In this case, the protection group associated with the AID will be accessed. Non protection group AIDs can be specified for the following types: ■ 1+1: port AID (starting in Release 1.2) ■ 2F: port AID (starting in Release 2) ■ 4F: port AID (starting in Release 1) ■ EQPTDCC: circuit pack AID ■ EQPTTMG: circuit pack AID ■ EQPTSWFBR: circuit pack AID ■ EQPTIOFBR: circuit pack AID ■ EQPTCTL: controller complex AID, circuit pack AID. To address a controller in the system control shelf, use either ctlcpx0 or ctlcpx1. To address a controller in an IO shelf, use either bay-shelf-#-#-ctlmem0-cp or bay-shelf-#-#-ctlmem1-cp. ■ PATHDRI: input tributary AID (starting in Release 3.1). This option is only allowed if <i>ppgname</i> is specified (see the Description Section for more information).
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ppgname</i>	Path protection group name (Starting in Release 3.1)

Table 3-69. OPR-PROTNSW Input Parameters (cont 2 of 3)

Parameter Name	Description
	Specifying this parameter can cause OPR-PROTNSW to operate on more than one protection group. See the Description Section for more information. Storage and retrieval of the ppgname is case sensitive, but actual use of the ppgname to determine the corresponding protection group is case insensitive. It is an ASCII string of up to 24 characters from the TID character set. This parameter can only be specified for path protection groups. If specified for other than path protection groups then the command will be DENY'd with IDNV. If input values are specified for aid and ppgname then the command will be DENY'd with IDNV if there is no protection group described by aid, ppgname.
	For a CONSTITUENTPATH protection type, if a value is specified for ppgname then an input tributary AID value must also be specified for aid.
prototype	Protection Type. Values: ■ 1+1 (starting in Release 1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1) ■ PATHDRI (starting in Release 3.1). All constituents of the protection group will be switched. ■ 1xNELEC ■ EQPTDCC (starting in Release 3.1) ■ EQPTTMG ■ EQPTSWFBR Switch fabric protection. This protection type refers to the switch packs. ■ EQPTIOFBR I/O fabric protection. This is only for the BWM and refers to the switch/576, 768 plus the swifnn circuit packs. ■ EQPTCTL

Table 3-69. OPR-PROTNSW Input Parameters (cont 3 of 3)

Parameter Name	Description
<i>rid</i>	Ring Identification Name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> 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 <i>aid</i> is specified, then <i>rid</i> can be omitted. This parameter is applicable for the following <i>prototype</i> values: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1)
	Starting in Release 3.0, 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).
<i>spec_block</i>	See the following "OPR-PROTNSW <i>spec_block</i> Parameters" table.

Table 3-70. OPR-PROTNSW *spec_block* Parameters (cont 1 of 4)

Parameter	Description/PROTOTYPE	Value
<i>sc</i>	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 prototypes: ■ 1+1 (starting in Release 1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1)	LOCKOUT, FRCD, MAN LOCKOUT, FRCD, MAN LOCKOUT, FRCD, MAN

Table 3-70. OPR-PROTNSW *spec_block* Parameters (cont 2 of 4)

Parameter	Description/PROTYPE	Value
	■ PATHDRI (starting in Release 3.1) ■ 1xNELEC ■ EQPTSWFBR, or EQPTIOFBR Starting with Release 3.1, FRCD no longer applies for EQPTTMG. ■ EQPTCTL ■ EQPTDCC	LOCKOUT, FRCD, MAN LOCKOUT, FRCD, MAN FRCD, MAN MAN MAN
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 prototypes: ■ 1+1 (starting in Release 1.2) For <i>sc</i>=LOCKOUT, <i>dest</i> must be PROTN. ■ 2F (starting in Release 2) ■ 4F (starting in Release 1) ■ EQPTDCC (starting in Release 3.1) ■ PATHDRI (starting in Release 3.1) For <i>sc</i>=LOCKOUT, <i>dest</i> must be PROTN. ■ EQPTTMG ■ EQPTSWFBR ■ EQPTIOFBR	WKG, PROTN WKG, PROTN WKG, PROTN 0, 1 WKG, PROTN 0, 1 0, 1 0, 1

Table 3-70. OPR-PROTNSW *spec_block* Parameters (cont 3 of 4)

Parameter	Description/PROTYPE	Value
	■ EQPTCTL	0, 1
<i>destaid</i>	Destination Entity AID. If neither <i>dest</i> nor <i>destaid</i> is specified, then the OPR-PROTNSW command does nothing. If <i>dest</i> and <i>destaid</i> are inconsistent, then the command will be denied. For protection group types 1xNELEC, 1xNOPT, 2F, and 4F, <i>destaid</i> 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, <i>destaid</i> specifies the entity that should be active after the switch operates. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1) ■ EQPTDCC (starting in Release 3.1) ■ PATHDRI (starting in Release 3.1) Starting in Release 3.1, if a value is specified for <i>ppgname</i> and none for <i>aid</i> then the entire set of path protection groups identified by <i>ppgname</i> switches to the input designated via <i>destaid</i> (if the AID exists). Starting in Release 3.1, if a value is specified for <i>ppgname</i> and also <i>aid</i> then the operation applies to the specific constituent groups identified by the (input) group member AIDs. ■ 1xNELEC ■ EQPTTMG ■ EQPTSWFBR ■ EQPTIOFBR ■ EQPTCTL	port AID port AID port AID circuit pack AID logical tributary AID port AID circuit pack AID circuit pack AID circuit pack AID circuit pack AID circuit pack AID

Table 3-70. OPR-PROTNSW *spec_block* Parameters (cont 4 of 4)

Parameter	Description/PROTYPE	Value
<i>destside</i>	Destination. If a value is specified for <i>dest</i>, then <i>destside</i> is required for the following prototypes; otherwise, it is not allowed: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1)	EAST, WEST EAST, WEST If the release allows a LOCK-OUT of ALL-SPANS, <i>destside</i> may be omitted for this case. BOTH Valid for Lock-out of Protection, Span
<i>swtype</i>	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 prototypes; otherwise, it is not allowed: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1)	SPAN, RING 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 3-71. Protection Switching Parameters for Rings

Case	sc	dest	swtype	Description
LS-R	LOCKOUT	WRK	RING	Prevents any ring switch for the addressed span. This case will be available in a future release.
LS-S	LOCKOUT	WRK	SPAN	Prevents any span switch for the addressed span (4F only). This case will be available in a future release.
LP-A	LOCKOUT	PROTN	ALLSPANS	Prevents both span and ring switching on the entire ring. This case will be available in a future release.
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 lock out of all spans).
2. *Destaid* can be assigned a value instead of *dest*.
3. The entries for EXERCISER are shown for completeness even though that value of *sc* may not be allowed in initial releases.

OUTPUT FORMAT

If the **OPR-PROTNSW** command completes successfully, then the following normal completion response is returned:

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

OUTPUT PARAMETERS

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

EXAMPLE OUTPUT

The following example shows the successful completion of an **OPR-PROTNSW** command by the network element:

```
OPR-PROTNSW:LT-WBM:1-1-o11:123456::1+1:sc=man,dest=protn;  
  
LT-WBM 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 apply to the **OPR-PROTNSW** command.

RELATED TL1 MESSAGES

DLT-CRS

ENT-CRS

RLS-PROTNSW

NAME

OPR-SYNCNSW: Operate Synchronization Switch

The **OPR-SYNCNSW** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

OPR-SYNCNSW-*modifier*:*tid*::*ctag*::*sc*[,*dest*];

DESCRIPTION

The **OPR-SYNCNSW** command can be initiated by user to request the network element to operate manual or forced synchronization reference protection switch, to lock out synchronization reference switching, or to request a change from the provisioned synchronization mode to forced holdover state.

The **OPR-SYNCNSW** command generates **REPT EVT** or **REPT ALM** messages.

INPUT PARAMETERS

Table 3-72. **OPR-SYNCNSW** Input Parameters (cont 1 of 2)

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

Table 3-72. OPR-SYNCNSW Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>sc</i>	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. ■ FRCD Forced switch. This is applicable to all modifiers. For the REF modifier, it forces selection of the specified reference determined by the destination parameter. For the MOD modifier, it forces system timing from the locked mode to the holdover mode. ■ 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.
<i>dest</i>	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 1.2, this parameter can also have value: ■ LINE1. Starting with Release 3.0, this parameter can also have value: ■ LINE2.

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 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 apply to the **OPR-SYNCNSW** command as well.

RELATED TL1 MESSAGES

RLS-SYNCNSW

SET-SYCN

RTRV-SYCN

NAME

REPT ALM: Report Alarm

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

- WaveStar BandWidth Manager, Release 1.0

DESCRIPTION

REPT ALM messages are generated autonomously by the network element to report an alarm that requires immediate attention by the craft at the OS. Each alarm message has an alarm severity associated with it.

General Discussion of Alarms

See **RTRV - ALM** for a general discussion of Alarms.

If an alarm has an alarm level of critical, major, or minor, then its occurrence will be reported in a **REPT ALM** message.

An alarm level can be assigned by **ED - ASAP - PROF**. If an alarm level has not been assigned, then it has a default alarm level, which is a function of the type of profile.

An 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 3-73. REPT ALM Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>almcde</i>	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.
<i>atag</i>	Automatic Tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element. The network element uses whole numbers from 000 through 999.
<i>modifier</i>	This 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 2) ■ OC3 A facility-related event at the optical carrier signal level 3 (starting in Release 1.2) ■ OC12 A facility-related event at the optical carrier signal level 12 (starting in Release 1.1) ■ 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 1.2)

Table 3-73. REPT ALM Output Parameters (cont 2 of 3)

Parameter Name	Description
	■ STS12C A facility-related event for a concatenated STS12 (starting in Release 2) ■ STS48C A facility-related event for a concatenated STS48 (starting in Release 3) ■ STM1 A facility-related event for synchronous transport mode 1 (starting in Release 1.2) ■ STM1E A facility-related event for synchronous transport mode 1, electrical (starting in Release 3.1) ■ STM4 A facility-related event for synchronous transport mode 4 (starting in Release 1.3) ■ STM16 A facility-related event for synchronous transport mode 16 (starting in Release 1.2) ■ STM64 A facility-related event for synchronous transport mode 64 (starting in Release 2) ■ VC3 A facility-related event for virtual container 3 (starting in Release 1.2) ■ VC4 A facility-related event for virtual container 4 (starting in Release 1.3) ■ VC44C A facility-related event for a concatenated VC signal (starting in Release 2) ■ VC416C A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 3)
<i>aid</i>	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.
<i>ntfcncde</i>	Notification Code. This is the alarm level and will have one of the following values: ■ CR - Critical alarm ■ MJ - Major alarm ■ MN - Minor alarm ■ CL - Cleared alarm.
<i>condtype</i>	Condition Type. This parameter identifies the type of alarm indication being reported. See OSEG Appendix A for details.

Table 3-73. REPT ALM Output Parameters (cont 3 of 3)

Parameter Name	Description
<i>srveff</i>	Service Effect. This indicates the effect of the reported alarm on service and has one of the following values: ■ SA - Service-affecting condition ■ NSA - Nonservice-affecting condition A message reporting the clearing of an alarm has the same <i>srveff</i> value as the one reporting the alarm.
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>thlev</i>	Threshold Level (starting in Release 3.1). Only valid for a <i>condtype</i> of T-BERL. Values: ■ 6 - implies "Bit Error Rate"; that is, Signal Degrade ■ 3 - implies "Excessive Bit Error Rate"; that is, Signal Fail
<i>conddescr</i>	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 98-01-01 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 98-01-01 08:00:00
A 129 REPT ALM 0C48
  "1-1-u-#-03-1:CL,LOS,SA,01-01,07-29-13:\"Communications, 0C48 port,
  Loss Of Signal-cleared\"";
```

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT COND

REPT EVT

REPT SW

RTRV-ALM

RTRV-COND

RTRV-HDR

SET-SYNCN

NAME

REPT COND: Report Condition

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

- WaveStar BandWidth Manager, Release 1.0

DESCRIPTION

Alarms can have notification codes (levels) of critical, major, minor, not alarmed, and not reported (CR, MJ, MN, NA, NR). **REPT COND** messages are generated periodically and autonomously to report the active alarms of level NA (status conditions).

General Discussion of Alarms

See the **RTRV-ALM** command for a general discussion of Alarms.

REPT COND autonomous messages are generated at 6:00 A.M., 12:00 Noon, 6:00 P.M., and 12:00 Midnight. They retrieve all active alarms of level Not Alarmed from a network element.

REPT COND is closely related to **REPT EVT** which autonomously reports when an alarm of notification code NA either sets or clears. When **REPT COND** events are generated periodically, they report the **REPT EVT** events that are still set.

Because only active status conditions are retrieved, transients such as automatic protection switch events are not retrieved.

OUTPUT FORMAT

The general format of a **REPT COND** autonomous message is as follows:

```
sid date time
A atag REPT COND modifier
  "aid:ntfcncde,condtype,srveff,ocrdat,ocrtm[, ,,\"conddescr\"]"
  (1 or more lines of the above)
;
```

If there is more than one condition to report, then this format will be used for each condition.

That is, it is not allowable to just repeat the lines...*"aid:ntfcncde,..."* because the conditions may have different modifiers.

Starting in Release 3.1, the output format is as follows:

```

sid date time
A atag REPT COND modifier
  "aid:ntfcncde,condtype,srveff,ocrdat,ocrtm,,[tmper],[\"conddescr\"]"
  (1 or more lines of the above)
;
```

Applicable output is ordered by the value of occurrence date (*ocrdat*) and occurrence time (*ocrtm*) with the most recent listed first.

Each “applicable output” consists of 4 lines, the first one being *sid date time* and the last being a semicolon.

OUTPUT PARAMETERS

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

Table 3-74. REPT COND Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>atag</i>	Automatic tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element. The network element uses whole numbers from 000 through 999.
<i>modifier</i>	This 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 2) ■ OC3 A facility-related event at the optical carrier signal level 3 (starting in Release 1.2)

Table 3-74. REPT COND Output Parameters (cont 2 of 3)

Parameter Name	Description
■ OC12	A facility-related event at the optical carrier signal level 12 (starting in Release 1.1)
■ 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 1.2)
■ STS12C	A facility-related event for a concatenated STS12 (starting in Release 2)
■ STS48C	A facility-related event for a concatenated STS48 (starting in Release 3)
■ STM1	A facility-related event for synchronous transport mode 1 (starting in Release 1.2)
■ STM1E	A facility-related event for synchronous transport mode 1, electrical (starting in Release 3.1)
■ STM4	A facility-related event for synchronous transport mode 4 (starting in Release 1.3)
■ STM16	A facility-related event for synchronous transport mode 16 (starting in Release 1.2)
■ STM64	A facility-related event for synchronous transport mode 64 (starting in Release 2)
■ VC3	A facility-related event for virtual container 3 (starting in Release 1.2)
■ VC4	A facility-related event for virtual container 4 (starting in Release 1.3)
■ VC44C	A facility-related event for a concatenated VC signal (starting in Release 2)
■ VC416C	A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 3)

Table 3-74. REPT COND Output Parameters (cont 3 of 3)

Parameter Name	Description
<i>aid</i>	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.
<i>conddescr</i>	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: Environmental, Misc Discrete, door open
<i>condtype</i>	Condition type. This parameter identifies the type of event indication being reported. See OSEG Appendix A for details.
<i>ntfcncde</i>	Notification code. This is the alarm level and the parameter must have the value NA (No Alarm).
<i>ocrdat</i>	Occurrence date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>srveff</i>	Service Affect. This is the affect on service and the parameter must have the value NSA (Not Service Affecting).
<i>tmper</i>	Time Period (starting in Release 1). Only used for TCAs. Values are: ■ 15 minutes ■ 1 day. See OSEG Appendix A for details.

EXAMPLE OUTPUT

In the **REPT COND** response that follows, two conditions are reported. Notice that this requires two autonomous messages.

```
LT-WBM 98-01-01 12:00:01
A 5 REPT COND COM
  "misc_in3:NA,MISC,NSA,01-11,07-20-15,,,\"Environmental, Misc
Discrete,, door open\""
;
```

In the following autonomous message, OC48 LOS is reported from bay 1, shelf 1, slot 2. This was reported as a status (condition) and not an alarm because the notification code was previously set to NA (No Alarm). See **ED-ASAP-PROF** for how to change a notification code.

```
LT-WBM 98-01-01 12:00:00
A 4 REPT COND OC48
  "1-1-u-#-02-1:NA,LOS,NSA,01-01,07-59-59,,,\"Communications, OC48
port, Loss Of Signal\""
;
```

Notice that the most recent condition is listed first.

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT ALM

REPT EVT

RTRV-ALM

RTRV-COND

RTRV-FLT-STATE

RTRV-HDR

NAME

REPT DBCHG: Report Database Change

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

- WaveStar BandWidth Manager, Release 1.0

DESCRIPTION

The **REPT DBCHG** message reports any change in the system database. Changes can be caused by a TL1 user, a CMISE user, or by an internally-generated state change.

Changes in user provisionable attributes are reported as the equivalent TL1 command that would cause that change. Changes in non-user provisionable attributes are reported using only the AID and the BLOCK parameters.

Any time a command is entered that causes a system reset, a **REPT DBCHG** message is transmitted before the system resets.

Any time the system controller resets (including on power up), a **REPT DBCHG** message is transmitted after the controller has successfully recovered from the reset.

If a database change occurs as a result of a TL1 command in which an AID range is entered, the system will output separate **REPT DBCHG** messages for each affected AID.

If the database change occurs as a result of a TL1 command, a **REPT DBCHG** message will be transmitted to users provisioned to receive **REPT DBCHG** messages, including the user which issued the command. Therefore, a memory management OS must expect to receive database change messages for changes it caused.

OUTPUT FORMAT

The following output message is returned:

```
sid date time
A atag REPT DBCHG
  "TIME=chgtm,DATE=chgdatt: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 3-75. REPT DBCHG Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>atag</i>	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.
<i>chgtm</i>	Time When The Change Occurred. Value: HH-MM-SS.
<i>chgdat</i>	Date When The Change Occurred. Value: YY-MM-DD.
<i>ccb</i>	Command Code Block. Value: verb-modifier[-modifier]
<i>aid</i>	Access Identifier(s). One or more AIDs, separated by a comma. See the AID table in OSEG Appendix A. The <i>aid</i> block can also contain a 'uid' parameter; for example, the report a change made with ENT -USER-SECU . The <i>aid</i> can also be reported using && ranging; for example, 1-1-#-#-01-1-1&&-192.
<i>com_block</i>	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 3-75. REPT DBCHG Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	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.
<i>pst</i>	Primary State. Values: Same as those in the command which is being reported.
<i>sst</i>	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 98-01-01 08:00:00
A 001 REPT DBCHG
  "TIME=07-59-59,DATE=98-01-01:ED-EQPT:1-1::ONCPI=2:"
;
```

RELATED TL1 MESSAGES

INIT-SYS

RTRV-A0

NAME

REPT EVT: Report Event

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

- WaveStar BandWidth Manager, Release 1.0

DESCRIPTION

REPT EVT messages are generated autonomously to report alarms of level not alarmed.

General Discussion of Alarms

See the **RTRV-ALM** command for a general discussion of alarms.

If an alarm is provisioned as Not Alarmed (NA), then the occurrence of that alarm is reported in a **REPT EVT** message. **REPT EVT** messages also occur when any such standing alarms clear and are used to report transient conditions.

A standing condition is an alarm event that has a beginning and an end. When the event begins, the standing condition is declared via an autonomous message. When the event ends, an autonomous message is sent to indicate that the event cleared.

A transient condition only results in one autonomous message - a declaration that a specific transient condition occurred.

Alarm levels can be assigned by **ED-ASAP-PROF**. If an alarm level has not been assigned, then the alarm has a default alarm level which is a function of the type of profile.

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** TL1 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.

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 3-76. REPT EVT Output Parameters (cont 1 of 4)

Parameter Name	Description
<i>atag</i>	Automatic Tag. The <i>atag</i> is used for message sequencing. The number is incremented by one for each autonomous message sent by the network element. The network element uses whole numbers from 000 through 999.
<i>modifier</i>	This 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 2) ■ OC3 A facility-related event at the optical carrier signal level 3 (starting in Release 1.2) ■ OC12 A facility-related event at the optical carrier signal level 12 (starting in Release 1.1) ■ 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 1.2) ■ STS12C A facility-related event for a concatenated STS12 (starting in Release 2) ■ STS48C A facility-related event for a concatenated STS48 (starting in Release 3) ■ STM1 A facility-related event for synchronous transport mode 1 (starting in Release 1.2)

Table 3-76. REPT EVT Output Parameters (cont 2 of 4)

Parameter Name	Description
	■ STM1E A facility-related event for synchronous transport mode 1, electrical (starting in Release 3.1) ■ STM4 A facility-related event for synchronous transport mode 4 (starting in Release 1.3) ■ STM16 A facility-related event for synchronous transport mode 16 (starting in Release 1.2) ■ STM64 A facility-related event for synchronous transport mode 64 (starting in Release 2) ■ VC3 A facility-related event for virtual container 3 (starting in Release 1.2) ■ VC4 A facility-related event for virtual container 4 (starting in Release 1.3) ■ VC44C A facility-related event for a concatenated VC signal (starting in Release 2) ■ VC416C A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 3)
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A for details about a specific AID. For a non protection switching event, <i>aid</i> 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, <i>aid</i> 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.

Table 3-76. REPT EVT Output Parameters (cont 3 of 4)

Parameter Name	Description
	For the following protection group types (if they exist in the product) 1xNELEC, 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 case to consider: ■ W(orking) -> P(rotection) ■ P -> W ■ W -> W ■ P -> P. Using <i>protn</i> and <i>wkg</i> to represent the working and protection AIDs, the AIDs for there 4 cases are: ■ <i>wrk</i> ■ <i>wrk</i> ■ <i>wrk</i> ■ <i>protn</i>. 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: ■ <i>wrk</i> ■ <i>protn</i> ■ <i>wrk</i> ■ <i>protn</i>. 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.

Table 3-76. REPT EVT Output Parameters (cont 4 of 4)

Parameter Name	Description
<i>condeff</i>	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).
<i>conddescr</i>	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, <i>conddescr</i> is: category, entity, description, additional text, prototype.
<i>condtype</i>	Condition Type. This parameter identifies the type of event indication being reported. See OSEG Appendix A for details.
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>thlev</i>	Threshold Level (starting in Release 1). 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 .
<i>monval</i>	Monitored (that is, measured) Value (starting in Release 1). Only used for TCAs. See OSEG Appendix A for details.
<i>tmper</i>	Time Period (starting in Release 1). Only used for TCAs. Values are: ■ 15 minutes ■ 1 day. See OSEG Appendix A for details.

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 98-01-01 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 98-01-01 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 98-01-10 08:00:00
A 009 REPT EVT STS1
  "1-1-u-#-14-3-2:T-SESP,TC,01-10,07-59-59,,,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 98-01-10 08:11:05
A 010 REPT EVT T3
"1-1-u-#-10-2:T-UASP,TC,01-10,08-11-04,,,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 98-01-10 08:12:00
A 015 REPT EVT OC3
"1-1-o40-w-10-2:WKSWPR-2,TC,01-10,08-12-00:\"Protection Switch, OC3
port, Lockout,, 1+1\""
;
```

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT ALM

REPT COND

RTRV-ALM

RTRV-COND

RTRV-HDR

NAME

REPT EVT SESSION: Report Event Session

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

- WaveStar BandWidth Manager, Release 3.0

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"
;
```

OUTPUT PARAMETERS

Table 3-77. REPT EVT SESSION Output Parameters

Parameter Name	Description
<i>spec_block</i>	<i>sysavst</i> System Availability Status. This parameter is available starting in Release 3. 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 BandWidth Manager, Release 1.0

DESCRIPTION

REPT SW messages are generated autonomously to report equipment protection switches of a duplex equipment unit pair. These equipment pairs are referred to as 1+1 equipment protection groups. The message indicates the equipment that was placed in the active state. If more than one circuit pack became active, then there will be more than one autonomous message.

Starting in Release 3.0, the **REPT EVT** command is used to report 1+1 equipment protection switch state changes that do not result in a change of active units.

OUTPUT FORMAT

The general format of a **REPT SW** message is as follows:

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

OUTPUT PARAMETERS

Table 3-78. REPT SW Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>atag</i>	Automatic Tag. This is used for message sequencing. The number is incremented by one for each autonomous message. Values: ■ 000 through 999.

Table 3-78. REPT SW Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>actid</i>	Active Identifier. This is the circuit pack AID of the equipment that was placed in the active state. See the AID table in OSEG Appendix A.

EXAMPLE OUTPUT

The following example shows a **REPT SW** message:

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

RELATED TL1 MESSAGES

OPR-PROTNSW

RLS-PROTNSW

RTRV-PROTN-GRP

NAME

RLS - LPBK: Release Loopback

The **RLS - LPBK** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T4

COMMAND PRIORITY

1.

INPUT FORMAT

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***.

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 3-79. RLS - LPBK Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the remove release loopback command is to act on. Values:

Table 3-79. RLS - LPBK Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
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).

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 98-01-01 08:00:00  
M 123456 COMPLD  
;
```

The following example shows the successful completion of a **RLS-LPBK** command which releases the cross-connect loopback on an VC3 tributary:

```
RLS-LPBK-VC3:LT-WBM:1-1-#-#-2-1-1:123456;  
  
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 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

RLS-PROTNSW: *tid:[aid]:ctag::prototype,[rid]:spec_block;*

Starting in Release 3.1, **RLS-PROTNSW** has the following input format:

RLS-PROTNSW: *tid:[aid]:ctag::prototype,[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 3-80. *ppgname* and destination usage

protection grp type	command target id		comment
	<i>aid</i>	path protection group name	
PATHDRI	not used	<i>ppgname</i>	operation applies to all tributaries that are group members of the <i>ppgname</i> (note 1)
PATHDRI	grp member (input) logical tributary AID	<i>ppgname</i>	operation applies to all tributaries that are group members of the <i>aid</i> , <i>ppgname</i> 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 3-81. **RLS-PROTNSW** Input Parameters (cont 1 of 4)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. If <i>rid</i> is specified, then <i>aid</i> can be omitted.

Table 3-81. RLS - PROTNSW Input Parameters (cont 2 of 4)

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 <i>protype</i> for a list of the protection group types. For the BSW group, the ebswgrpall aid is allowed. For some protection groups aid is not constrained to be a protection group AID. In this case, the protection group associated with the AID will be accessed. Non protection group AIDs can be specified for the following types: ■ 1+1: port AID (starting in Release 1.2) ■ 2F: port AID (starting in Release 2) ■ 4F: port AID (starting in Release 1) ■ EQPTTMG, EQPTSWFBR, or EQPTIOFBR: circuit pack AID Starting with Release 3.1, EQPTTMG no longer applies to RLS-PROTNSW.
	■ PATHDRI Input tributary AID (starting in Release 3.1). This option is only allowed if ppgname is specified (see the Description Section for more information).
ctag	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
ppgname	Path protection group name (Starting in Release 3.1)
	Specifying this parameter can cause RLS-PROTNSW to operate on more than one protection group. See the Description Section for more information. Storage and retrieval of the ppgname is case sensitive, but actual use of the ppgname to determine the corresponding protection group is case insensitive. It is an ASCII string of up to 24 characters from the TID character set. This parameter can only be specified for path protection groups. If specified for other than path protection groups then the command will be DENY'd with IDNV. If input values are specified for aid and ppgname then the command will be DENY'd with IDNV if there is no protection group described by aid, ppgname.

Table 3-81. RLS - PROTNSW Input Parameters (cont 3 of 4)

Parameter Name	Description
	For a CONSTITUENTPATH protection type, if a value is specified for ppgname then an input tributary AID value must also be specified for aid .
prototype	Protection Type. Values: ■ 1+1 (starting in Release 1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1) ■ PATHDRI (starting in Release 3.1) All constituents of the protection group will be cleared. ■ 1xNELEC ■ EQPTDCC (starting in Release 3.1) ■ EQPTTMG ■ EQPTSWFBR Switch fabric protection. This protection type refers to the switch packs. ■ EQPTIOFBR I/O fabric protection. This is only for the BWM and refers to the switch/576, 768 plus the <i>swifnn</i> circuit packs. ■ EQPTCTL
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 prototype values: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1)
	Starting in Release 3.0, the value can also be a quoted text string of up to 20 characters consisting of 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters found in the English language will be allowed).

Table 3-81. RLS-PROTNSW Input Parameters (cont 4 of 4)

Parameter Name	Description
<i>spec_block</i>	See the following "RLS-PROTNSW <i>spec_block</i> Parameters" table.

Table 3-82. RLS-PROTNSW *spec_block* Parameters (cont 1 of 2)

Parameter	Description / PROTYPE	Value
<i>sc</i>	Switch Command. This parameter is applicable to the following prototypes: Omitting a value for <i>sc</i> is equivalent to specifying a value of: ■ 1+1 (starting in Release 1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1) ■ PATHDRI (starting in a future release) ■ 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 <i>destaid</i>. ■ EQPTTMG, EQPTSWFBR, or EQPTIOFBR Starting with Release 3.1, EQPTTMG no longer applies to RLS-PROTNSW.	CLEAR CLEAR CLEAR CLEAR CLEARLOCK-OUT, CLEAR CLEARFRCD
<i>destside</i>	Destination. If the RLS-PROTNSW command is used to remove a LOCKOUT on all spans (LP-A), then either allowable value of <i>destside</i> results in all LOCKOUTs being removed. This parameter is required for the following prototypes: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1)	EAST, WEST EAST, WEST
<i>destaid</i>	Destination Entity AID. This parameter is applicable to the following prototypes:	

Table 3-82. RLS-PROTNSW *spec_block* Parameters (cont 2 of 2)

Parameter	Description / PROTYPE	Value
	■ 1xNELEC <i>destaid</i> only used when <i>sc</i> is CLEAR-LOCKOUT. For this case, <i>destaid</i> can only indicate a working unit. For all other cases, <i>destaid</i> 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 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 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M4

COMMAND PRIORITY

1.

INPUT FORMAT

RLS-SYNCNSW-*modifier*:*tid*::*ctag*::[*dest*];

DESCRIPTION

The **RLS-SYNCNSW** command can be initiated by user to request the network element to release (clear) any existing lockout, forced or manual system timing reference switching or to release the forced request on the timing mode so that it will return to the provisioned locked mode from the holdover mode.

The **RLS-SYNCNSW** command generates a **REPT EVT** or **REPT ALM** messages.

INPUT PARAMETERS

Table 3-83. RLS-SYNCNSW Input Parameters (cont 1 of 2)

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

Table 3-83. RLS - SYNCNSW Input Parameters (cont 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 valid and required for the REF modifier only. This parameter is omitted for the MOD modifier (i.e., when the reference is in forced mode). Values: ■ EXTREF1 ■ EXTREF2. Starting with Release 1.2, this parameter can also have value: ■ LINE1.

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 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 apply to the **RLS-SYNCNSW** command as well.

RELATED TL1 MESSAGES

OPR-SYNCNSW

SET-SYNCN

RTRV-SYNCN

NAME

RTRV-ALM: Retrieve Alarm

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-ALM*[-modifier]:tid:[aid]:ctag::[ntfcncde],[condtype],*
[srveff];

DESCRIPTION

RTRV-ALM command messages can be initiated by the user to retrieve all active alarms of level Critical, Major, or Minor from a network element. Any alarm reported by an autonomous **REPT ALM** message which is active when a **RTRV-ALM** message is received, is included in the **RTRV-ALM** response message.

Alarms of level Not Alarmed are reported by **RTRV-COND**.

The alarms are reported one line per condition, similar to the autonomous messages conveyed by **REPT ALM**.

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.

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.

Every 6 hours, **REPT COND** autonomous message reports alarms of level NA that are still set. **REPT COND** does not report transients. For a status to be reported via a **REPT COND** autonomous message, it must have been previously reported by another **REPT** message such as **REPT EVT**. **RTRV-FLT-STATE** can be used to determine if there are any alarms of level NR (not reported).

If **INH-MSG** has been previously invoked, 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 3-84. RTRV-ALM Input Parameters

Parameter Name	Description
<i>modifier</i>	This parameter is a message modifier to the command and may have one of the following values: ■ ALL This requests all alarms. This is the default (equivalent to the value being omitted).
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the entity for which the current conditions are requested. For initial releases, the <i>aid</i> may not be specified.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ntfcncde</i>	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 <i>ntfcncde</i>).
<i>condtype</i>	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 .
<i>srveff</i>	Service Effect (or condition effect). This indicates the effect of the reported alarm on service or the effect of an alarm on the condition of the network element. This parameter may have the following value or it may be omitted: ■ ALL Requests all alarms. This is the default (equivalent to no value being specified).

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

Table 3-85. RTRV-ALM Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>aid</i>	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.
<i>aidtype</i>	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

Table 3-85. RTRV-ALM Output Parameters (cont 2 of 3)

Parameter Name	Description
■ 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 1.2)
■ OC12	A facility-related event at the optical carrier signal level 12 (starting in Release 1.1)
■ 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 1.2)
■ STS12C	A facility-related event for a concatenated STS12 (starting in Release 2)
■ STS48C	A facility-related event for a concatenated STS48 (starting in Release 3)
■ STM1	A facility-related event for synchronous transport mode 1 (starting in Release 1.2)
■ STM1E	A facility-related event for synchronous transport mode 1, electrical (starting in Release 3.1)
■ STM4	A facility-related event for synchronous transport mode 4 (starting in Release 1.3)
■ STM16	A facility-related event for synchronous transport mode 16 (starting in Release 1.2)
■ STM64	A facility-related event for synchronous transport mode 64 (starting in Release 2)
■ VC3	A facility-related event for virtual container 3 (starting in Release 1.2)
■ VC4	A facility-related event for virtual container 4 (starting in Release 1.3)
■ VC44C	A facility-related event for a concatenated VC signal (starting in Release 2)

Table 3-85. RTRV-ALM Output Parameters (cont 3 of 3)

Parameter Name	Description
	■ VC416C A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 3)
<i>condtype</i>	Condition Type. This parameter identifies the type of alarm indication being reported. See OSEG Appendix A for details.
<i>ntfncde</i>	Notification Code. This is the alarm level. Values: ■ CR Critical alarm ■ MJ Major alarm ■ MN Minor alarm
<i>srveff</i>	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 Non-service-affecting alarm or status condition
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>conddescr</i>	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 98-01-01 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 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 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 apply to the **RTRV-ALM** command.

RELATED TL1 MESSAGES

ALW-ALM

ALW-MSG

ED-ASAP-PROF

INH-ALM

INH-MSG

REPT ALM

RTRV-ASAP-PROF

REPT COND

REPT EVT

RTRV-COND

RTRV-FLT-STATE

RTRV-HDR

NAME

RTRV-AO: Retrieve Autonomous Output

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

- WaveStar BandWidth Manager, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

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 3-86. RTRV-AO Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	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 98-01-01 08:00:00
M 123456 COMPLD
/*
LT-WBM 98-01-01 07:50:00
A 012 REPT DBCHG
"DATE=98-01-01, 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

RTRV-LOG-SECU

NAME

RTRV-ASAP-PROF: Retrieve ASAP Profile.

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

- WaveStar BandWidth Manager, Release 1.2

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 3-87. RTRV-ASAP-PROF Input parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>pftype</i>	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 3.1) ■ DS3IN DS3 Port (input). ■ DS3OUT DS3 Port (output), connected to a SONET port ■ DS3OUTSDH DS3 Port (output), connected to an SDH port ■ EQPT Equipment ■ SDH STM-N Port ■ SONET OC-N/EC1 Port ■ SYS System Events ■ TIMING System Timing ■ TRIBSDH VC-N tributary ■ TRIBSONET STS-N(c) SONET tributary
<i>pfname</i>	Profile Name. This indicates the name of the ASAP profile. Value: See the ENT-ASAP-PROF command for the values of this parameter. If <i>pfname</i> is omitted, then all profile names of type <i>pftype</i> 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 3-88. RTRV - ASAP - PROF Output Parameters (cont 1 of 7)

Parameter Name	Description		
<i>pftype</i>	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 3.1) ■ DS3IN DS3 Port (input) ■ DS3OUT DS3 Port (output), connected to a SONET port ■ DS3OUTSDH DS3 Port (output), connected to an SDH port ■ EQPT Equipment ■ SDH STM-N Port. ■ SONET OC-N/EC1 Port ■ SYS System Events ■ TIMING System Timing ■ TRIBSDH VC-N tributary. ■ TRIBSONET STS-N(c) SONET tributary.		
<i>pfname</i>	ASAP profile name.		
<i>spec_block</i>	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 <i>pftype</i>, each applicable specification block parameter will be reported.		
<i>pftype</i>	<table> <tr> <th>Keyword</th><th>Description</th></tr> </table>	Keyword	Description
Keyword	Description		

Table 3-88. RTRV - ASAP - PROF Output Parameters (cont 2 of 7)

Parameter Name	Description	
APS	<i>fop</i>	APS Failure of Protocol (starting in Release 1.3) This APS parameter applies to 1+1 optical protection groups. All other APS parameters apply only to 1xNOPT.
BLSR	<i>blsrinaps</i> <i>blsrimaps</i> <i>blsrdkb</i> <i>blsrts</i> <i>rsmc</i> <i>rinc</i> <i>ropn</i> <i>nidm</i> <i>dprn</i> <i>urt</i> <i>irpm</i> <i>rdip</i> <i>rsip</i> <i>etp</i> <i>rpss</i>	BLSR Inconsistent APS Codes BLSR Improper APS Codes fs BLSR Default K-bytes BLSR Traffic Squelched Local Squelch Map Conflict Ring Incomplete Ring Open Node ID Mismatch Duplicate Ring Node Unknown Ring Type (starting in Release 1.3) Inconsistent Ring Prot Mode (starting in Release 1.3) Ring Discovery in Progress Ring Startup in Progress Extra Traffic Preempted Ring Prot Switching Suspended (starting in Release 2)
DRIPATH	<i>psact</i>	Starting in Release 3.1. Path Switch Active
DS3IN	<i>sa_ds3los</i> <i>nsa_ds3los</i> <i>sa_ds3lof</i> <i>nsa_ds3lof</i>	DS3 Loss of Signal DS3 Loss of Frame

Table 3-88. RTRV - ASAP - PROF Output Parameters (cont 3 of 7)

Parameter Name	Description	
	<i>sa_ds3ais</i> <i>nsa_ds3ais</i> <i>sa_ds3ber</i> <i>nsa_ds3ber</i> <i>sa_ds3idle</i> <i>nsa_ds3idle</i>	Alarm Indication Signal - DS3 DS3 Bit Error DS3 Idle Signal
DS3OUT	<i>ais</i> <i>rfi</i> <i>uneq</i> <i>plm</i>	Alarm Indication Signal - Path Remote Failure Indication - Path STS Path Unequip STS Payload Label Mismatch
DS3OUTSDH	 <i>hpf_ssf</i> <i>hpf_rdi</i> <i>hpf_uneq</i>	 HP Server Signal Failure HP Remote Defect Indication HP Unequip
EQPT	 <i>sa_cpfail</i> <i>nsa_cpfail</i> <i>sa_cpuneq</i> <i>nsa_cpuneq</i> <i>sa_mcpuneq</i> <i>nsa_mcpuneq</i> <i>sa_cpinv</i> <i>nsa_cpinv</i> <i>sa_nvmw</i> <i>nsa_nvmw</i> <i>sa_fan</i> <i>nsa_fan</i> <i>sa_fuse</i> <i>nsa_fuse</i> <i>sa_rsrcusg</i> <i>nsa_rsrcusg</i>	 service affecting Circuit Pack Failure non service affecting Circuit Pack Failure Circuit Pack Unequipped/Missing Mate Circuit Pack Unequipped (starting in Release 2) Circuit Pack Invalid Non-Volatile Memory Wearout Fan Failure Power/Fuse Failure Resource Usage (starting in Release 1.3)

Table 3-88. RTRV - ASAP - PROF Output Parameters (cont 4 of 7)

Parameter Name	Description
<i>sa_mmis</i> <i>nsa_mmis</i>	Memory Mismatch (starting in Release 1.3)
<i>sa_nvmusg</i> <i>nsa_nvmusg</i>	Non-Volatile Memory Usage (starting in Release 1.3)
SDH	<i>sa_stmf_los</i> <i>nsa_stmf_los</i> service affecting STM Loss of Signal non service affecting STM Loss of Signal <i>sa_rsf_lof</i> <i>nsa_rsf_lof</i> STM Loss of Frame <i>sa_msf_ais</i> <i>nsa_msf_ais</i> MSeCT Alarm Indication Signal <i>sa_msf_rdi</i> <i>nsa_msf_rdi</i> MSeCT Remote Failure Indication <i>sa_msf_exc</i> <i>nsa_msf_exc</i> MSeCT Excessive Error <i>sa_msf_deg</i> <i>nsa_msf_deg</i> MSeCT Signal Degrade <i>sa_msf_ssf</i> <i>nsa_msf_ssf</i> MSeCT Server Signal Failure <i>sa_dccrs</i> <i>nsa_dccrs</i> DCC RSeCT Failure <i>sa_dccms</i> <i>nsa_dccms</i> DCC MSeCT Failure (starting in Release 1.3) <i>sa_lidrsmm</i> <i>nsa_lidrsmm</i> LinkID RSeCT Mismatch <i>sa_lidmsmm</i> <i>nsa_lidmsmm</i> LinkID MSeCT Mismatch (starting in Release 1.3) <i>sa_unsrs</i> <i>nsa_unsrs</i> User-Network Side RSeCT Failure <i>sa_unsms</i> <i>nsa_unsms</i> User-Network Side MSeCT Failure (starting in Release 1.3) <i>sa_dccrsdu</i> <i>nsa_dccrsdu</i> DCC RSeCT Disabled-Unavailable

Table 3-88. RTRV - ASAP - PROF Output Parameters (cont 5 of 7)

Parameter Name	Description	
	<i>sa_dccmsdu</i> <i>nsa_dccmsdu</i>	The parameters <i>sa_dccrsdu</i> and <i>nsa_dccrsdu</i> are replaced in Release 2 by <i>dccrsdu</i>, SYS ASAP. DCC MSect Disabled-Unavailable The parameters <i>sa_dccmsdu</i> and <i>nsa_dccmsdu</i> are replaced in Release 2 by <i>dccmsdu</i>, SYS ASAP.
SONET	<i>sa_los</i> <i>nsa_los</i> <i>sa_lof</i> <i>nsa_lof</i> <i>sa_aisl</i> <i>nsa_aisl</i> <i>sa_rfil</i> <i>nsa_rfil</i> <i>sa_eber</i> <i>nsa_eber</i> <i>sa_ber</i> <i>nsa_ber</i> <i>sa_dccsect</i> <i>nsa_dccsect</i> <i>sa_dccline</i> <i>nsa_dccline</i> <i>sa_lidsectmm</i> <i>nsa_lidsectmm</i> <i>sa_lidlinemm</i> <i>nsa_lidlinemm</i> <i>sa_unssect</i> <i>nsa_unssect</i> <i>sa_unsline</i> <i>nsa_unsline</i>	service affecting Loss of Signal non service affecting Loss of Signal Loss of Frame Alarm Indication Signal - Line Remote Failure Indication Excessive Error Bit Error/Signal Degrade DCC Sect Failure DCC Line Failure (starting in Release 3.1) LinkID Sect Mismatch LinkID Line Mismatch (starting in Release 1.3) User-Network Side Sect Failure User-Network Side Line Failure (starting in Release 1.3)
SYS		

Table 3-88. RTRV - ASAP - PROF Output Parameters (cont 6 of 7)

Parameter Name	Description	
	<i>arst</i>	Autonomous Reset
	<i>swerr</i>	software error
	<i>omerr</i>	Out of Memory Error
	<i>ferr</i>	File Error
	<i>adbf</i>	Auto Database Backup Failure
	<i>almtst</i>	Alarm Test
	<i>dccrsduc</i>	DCC RSect Disabled-Unavailable (starting in Release 2)
	<i>dccsectdu</i>	DCC Sect Disabled-Unavailable (starting in Release 2)
	<i>dcclinedu</i>	DCC Line Disabled-Unavailable (starting in Release 2)
	<i>dcctypm</i>	DCC Type Mismatch (starting in Release 2)
TIMING	<i>syncref</i>	Sync Reference Failure (external reference)
	<i>holdover</i>	System Clock Holdover
	<i>linesync</i>	Line Sync Reference Failure (starting in Release 2)
TRIBSDH	<i>sa_auf_lop</i> <i>nsa_auf_lop</i>	sa AU Loss of Pointer nsa AU Loss of Pointer
	<i>sa_auf_ais</i> <i>nsa_auf_ais</i>	AU Alarm Indication Signal
	<i>sa_hpf_rdi</i> <i>nsa_hpf_rdi</i>	HP Remote Defect Indication
	<i>sa_hpf_uneq</i> <i>nsa_hpf_uneq</i>	HP Unequip
	<i>sa_hpf_exc</i> <i>nsa_hpf_exc</i>	HP Excessive Error
	<i>sa_hpf_deg</i> <i>nsa_hpf_deg</i>	HP Signal Degrade
TRIBSONET		

Table 3-88. RTRV - ASAP - PROF Output Parameters (cont 7 of 7)

Parameter Name	Description
<i>sa_lop</i> <i>nsa_lop</i>	sa Loss of Pointer nsa Loss of Pointer
<i>sa_ais</i> <i>nsa_ais</i>	Alarm Indication Signal - Path
<i>sa_uneq</i> <i>nsa_uneq</i>	STS Path Unequip
<i>sa_pdi</i> <i>nsa_pdi</i>	STS Payload Defect Indicator
<i>sa_eber</i> <i>nsa_eber</i>	Excessive Error - Path
<i>sa_ber</i> <i>nsa_ber</i>	Bit Error/Signal Degrade - Path

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 98-01-01 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 98-01-01 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, 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

ED-ASAP-PROF

ENT-ASAP-PROF

NAME

RTRV-ATTR-ALM: Retrieve Attribute Alarm

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

1.

INPUT FORMAT

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

DESCRIPTION

The **RTRV-ATTR-ALM** command can be used to retrieve alarm delay and the alarm clear delay for two sets of alarms: facility alarm group (all communications notifications) and equipment alarm group (all equipment and processor error notifications). The **RTRV-ATTR-ALM** command also retrieves the state of office alarms - whether they are enabled or disabled. This state can be changed by the **ALW-ALM** and **INH-ALM** commands.

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

INPUT PARAMETERS

Table 3-89. RTRV-ATTR-ALM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	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
  "almdelfcft=AlarmDelayFacility,clrdefcft=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 3-90. RTRV-ATTR-ALM Output Parameters

Parameter Name	Description
<i>almdelfcft</i>	Alarm Delay Facility. Time in seconds a facility event has to be continuously present before an alarm is set. Values: 0-60.
<i>clrdefcft</i>	Clear Delay Facility. Time in seconds a facility event has to be continuously clear before an alarm is cleared. Values: 0-60.
<i>almdeleqpt</i>	Alarm Delay Equipment. Time in seconds an equipment event has to be continuously present before an alarm is set. Values: 0-60.
<i>clrdeleqpt</i>	Clear Delay Equipment. Time in seconds an equipment event has to be continuously clear before an alarm is cleared. Values: 0-60.
<i>almenable</i>	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 98-01-01 08:00:00  
M 123456 COMPLD  
"almdelfclt=12,clrdelfclt=12"  
"almdelqpt=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-MSG: Retrieve Attribute Message

The **RTRV-ATTR-MSG** command is available beginning in:

- WaveStar BandWidth Manager, Release 3.0

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 3-91. RTRV-ATTR-MSG Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	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 3-92. RTRV-ATTR-MSG Output Parameters

Parameter Name	Description
<i>msgstate</i>	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 98-01-01 08:00:00
M 123456 COMPLD
  "ON"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ALW-MSG

INH-MSG

RTRV-ATTR-ALM

NAME

RTRV-COND: Retrieve Condition

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-COND [*-modifier*] : *tid* : [*aid*] : *ctag* : : [*condtype*] ;

DESCRIPTION

Alarms can have notification codes of critical, major, minor, not alarmed, and not reported (CR, MJ, MN, NA, NR). If an alarm has a code CR, MJ, or MN, then it is retrieved by **RTRV-ALM**. If it has a notification code NA, then it is retrieved by **RTRV-COND**. If it is NR, then it can be reported by **RTRV-FLT-STATE**.

RTRV-COND is closely related to **REPT EVT** which autonomously reports when an alarm of notification code NA either sets or clears. **RTRV-COND** retrieves the **REPT EVT** events that are still set. Protection switching events that are reported by **REPT EVT** are not reported by **RTRV-COND** (for example, the lockout of a timing reference is not reported by **RTRV-COND**).

See the **RTRV-ALM** command for a more general discussion of alarms.

RTRV-COND command messages can be initiated by the user to retrieve all active alarms of level Not Alarmed (NA) from a network element.

In addition to reporting all **active** alarms of level NA previously reported by **REPT EVT**, **RTRV-COND** retrieves those reported by other autonomous messages.

Because only active NA alarms are retrieved, transients such as protection switch events are not retrieved.

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

INPUT PARAMETERS

Table 3-93. RTRV-COND Input Parameters

Parameter Name	Description
<i>modifier</i>	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).
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This is the address of the entity for which the current conditions are requested. For initial releases, the <i>aid</i> may not be specified.
<i>condtype</i>	Condition Type. Value: ■ ALL This requests all condition types. This is the default (equivalent to the value being omitted).
<i>ctag</i>	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:ntfncde,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 3-94. RTRV - COND Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>aid</i>	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.
<i>aidtype</i>	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. ■ 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 1.2). ■ OC12 A facility-related event at the optical carrier signal level 12 (starting in Release 1.1). ■ 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 1.2). ■ STS12C A facility-related event for a concatenated STS12 (starting in Release 2).

Table 3-94. RTRV-COND Output Parameters (cont 2 of 3)

Parameter Name	Description
	■ STS48C A facility-related event for a concatenated STS48 (starting in Release 3). ■ STM1 A facility-related event for synchronous transport mode 1 (starting in Release 1.2). ■ STM1E A facility-related event for synchronous transport mode 1, electrical (starting in Release 3.1). ■ STM4 A facility-related event for synchronous transport mode 4 (starting in Release 1.3). ■ STM16 A facility-related event for synchronous transport mode 16 (starting in Release 1.2). ■ STM64 A facility-related event for synchronous transport mode 64 (starting in Release 2). ■ VC3 A facility-related event for virtual container 3 (starting in Release 1.2). ■ VC4 A facility-related event for virtual container 4 (starting in Release 1.3). ■ VC44C A facility-related event for a concatenated VC signal (starting in Release 2). ■ VC416C A facility-related event for a signal concatenated at 16 times the VC4 rate (starting in Release 3).
<i>conddescr</i>	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.
<i>condtype</i>	Condition Type. This is an identifier of the condition. See OSEG Appendix A for details.
<i>ntfncnde</i>	Notification Code. This is the alarm level, and the command output must have the value No Alarm (NA).

Table 3-94. RTRV-COND Output Parameters (cont 3 of 3)

Parameter Name	Description
<i>ocrdat</i>	Occurrence Date. This indicates the date of the alarm being reported and has the format MM-DD (month-day).
<i>ocrtm</i>	Occurrence Time. This indicates the time of the alarm being reported and has the format HH-MM-SS (hours-minutes-seconds).
<i>srveff</i>	Service Affect. This is the affect on service and this command's output must have the value NSA (Not Service Affecting).
<i>thlev</i>	Threshold Level (starting in Release 1). 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 .
<i>monval</i>	Monitored (that is, measured) Value (starting in Release 1). Only used for TCAs. See OSEG Appendix A for details.
<i>tmper</i>	Time Period (starting in Release 1). 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 98-01-01 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_in-3,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.

RELATED TL1 MESSAGES

ALW-MSG

ED-ASAP-PROF

INH-MSG

REPT ALM

REPT COND

REPT EVT

RTRV-ALM

RTRV-FLT-STATE

RTRV-HDR

NAME

RTRV-CRS: Retrieve Cross-Connection

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

- 1.

INPUT FORMAT

The syntax for Release 1.0 is:

RTRV-CRS: *tid:in_aid,out_aid:ctag;*

Starting with Release 2.0, the syntax is:

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

Starting with Release 3.0, the syntax is:

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

DESCRIPTION

The **RTRV-CRS** command can be initiated by the user to retrieve information on the existing cross-connections in the network element.

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

INPUT PARAMETERS

Table 3-95. RTRV - CRS Input Parameters

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the retrieve cross-connection command acts. Values: ■ ALL ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>in_aid</i>	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).
<i>in_aid2</i>	Starting in Release 3.0, the <i>in_aid2</i> input parameter will not be available.
<i>out_aid</i>	Starting in Release 3.0, the <i>out_aid</i> input parameter will not be available.
<i>out_aid</i>	Output Access Identifier. Value: logical tributary AID. Ranging is not allowed.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

Starting with Release 1, the syntax 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"
;

```

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 3-96. RTRV-CRS Output Parameters (cont 1 of 5)

Parameter Name	Description
<i>in_aid</i>	Input Access Identifier. Value: logical tributary AID (See the AID table in OSEG Appendix A).
<i>in_aid2</i>	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 <i>in_aid</i> is the same as specified by the input parameter <i>in_aid</i> . The value reported by <i>in_aid2</i> is the AID of the other tributary input. If <i>in_aid</i> is the protection leg then <i>in_aid2</i> is the working leg, and vice versa. The role of <i>in_aid</i> (working or protection) can be determined from <i>repleg</i> .
<i>out_aid</i>	Output Access Identifier. Value: logical tributary AID.
<i>rate</i>	Rate indicates the cross-connection rate. Values:

Table 3-96. RTRV-CRS Output Parameters (cont 2 of 5)

Parameter Name	Description
	■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>act</i>	Atomic Cross-Connection Topology (Release 1.0 only). In the case of 2WAY cross-connections the RTRV-CRS commands responds with 2 lines of response, one for each leg. Value: POINT-TO-POINT
<i>spec_block</i>	
	<i>appg_aid</i> Adjunct Path Protection Group Access Identifier identifies associated path-protection group. See the AID table in OSEG Appendix A. Values: logical AID. <i>legstat</i> This parameter applies to Release 1.0 only. Leg Status. Indicates whether a leg shall be monitored and reported as a 1WAY cross-connection or part of a leg pair of a 2WAY cross-connection. Values: ■ 1WAY ■ 2WAY. <i>loca</i> Identifies the tid associated with <i>in_aid</i> 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 3.0, 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). <i>locz</i> Identifies the tid associated with <i>out_aid</i> of node at which service is dropped from the BLSR. This parameter is omitted for non-BLSR connections. Values: See <i>loca</i>.

Table 3-96. RTRV-CRS Output Parameters (cont 3 of 5)

Parameter Name	Description
	<i>lpbkstat</i> Indicates whether a cross-connect loopback exists on any of the input or the output tributaries of this cross-connection. Values: ■ YES ■ NO. <i>omode</i> 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. <i>repleg</i> 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. Starting with Release 3.1, this parameter can also have values: ■ 1WAYPSW ■ 1WAYPSP ■ 1WAYPSW indicates 1-WAY Path Switched, Working. This implies <i>in_aid</i> is the working leg. A value of 1WAYPSP implies <i>in_aid</i> is the protection leg. Starting with Release 3.1, this parameter can also have values: ■ 1WAYPAW ■ 1WAYPAP

Table 3-96. RTRV-CRS Output Parameters (cont 4 of 5)

Parameter Name	Description
	<i>rtnomode</i> 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. <i>rntaccstat</i> Indicates whether any of the portion of the return direction (destination-to-source) of a 2-way cross-connection is used in a test access connection. Values: ■ YES ■ NO. <i>taccstat</i> Indicates whether any of the portion of a 1-way cross-connection or the source-to-destination direction of a 2-way cross-connection is used in a test access connection. Values: ■ YES ■ NO. <i>xcappl</i> Application indicates one of the applications that are supported by compound cross-connection topologies. Values: 0-255 See ENT - CRS for suggested assignments. <i>rtnxcappl</i> Identifies the cross-connection application for the return direction (destination-to-source) of a 2-way cross-connection. Values: See <i>xcappl</i>.

Table 3-96. RTRV-CRS Output Parameters (cont 5 of 5)

Parameter Name	Description
	<i>xcnum</i> 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 <i>out_aid</i>): 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.
	<i>rtncnum</i> Identifies the cross-connection number for the return direction (destination-to-source) of a 2-way cross-connection. Values: See <i>xcnum</i>.
<i>state_block</i>	<i>pst</i> THIS IS CURRENTLY NOT USED. A comma (,) is placed in this field.

EXAMPLE INPUT/OUTPUT

The following examples show the successful completion of **RTRV - CRS** command by the network element.

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

```
RTRV-CRS-ALL:LT-WBM-789:1-1-#-#-all-all-all:123456;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
"1-1-001-W-8-1-1,2-1-001-W-1-1-1:STS1:OMODE=NORM, REPLEG=1WAY,
LPBKSTAT=NO, TACCSTAT=NO"
"1-1-002-W-6-1-1,2-1-002-W-2-1-1:STS1:OMODE=NORM, REPLEG=1WAY,
LPBKSTAT=NO, TACCSTAT=NO"
"2-1-003-W-4-1-1,1-1-003-W-3-1-1:STS1:OMODE=NORM, REPLEG=1WAY,
LPBKSTAT=NO, TACCSTAT=NO"
;
```

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-789:1-1-001-E-8-1-1:123456;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
"1-1-001-W-8-1-1,3-1-001-W-5-1-1:STS1:OMODE=NORM,RTNOMODE=NORM,
REPLEG=2WAY,LPBKSTAT=NO,TACCSTAT=NO,RTNTACCSTAT=NO"
"1-1-001-W-8-1-1,5-2-001-W-2-1-1:STS1:OMODE=NORM,REPLEG=1WAY,
LPBKSTAT=NO,TACCSTAT=NO"
;
```

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 98-01-01 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 98-01-01 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=VALID,LOCZ=LT-WBM-654,SQFZ=VALID,REPLEG=1WAYPSW,LPBKSTAT=NO,
TACCSTAT=NO"
;
```

The following examples show the successful completion of **RTRV-CRS** command by the network element. The following example retrieves the existing

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

```
RTRV-CRS-ALL:LT-WBM-789:1-1-#-#-all-all:123456;  
  
LT-WBM-789 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-001-W-8-1-1,2-1-001-W-1-1-1:VC3:OMODE=NORM,REPLEG=1WAY,  
LPBKSTAT=NO,TACCSTAT=NO"  
"1-1-002-W-6-1-1,2-1-002-W-2-1-1:VC3:OMODE=NORM,REPLEG=1WAY,  
LPBKSTAT=NO,TACCSTAT=NO"  
"2-1-003-W-4-1-1,1-1-003-W-3-1-1:VC3:OMODE=NORM,REPLEG=1WAY,  
LPBKSTAT=NO,TACCSTAT=NO"  
;
```

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**.

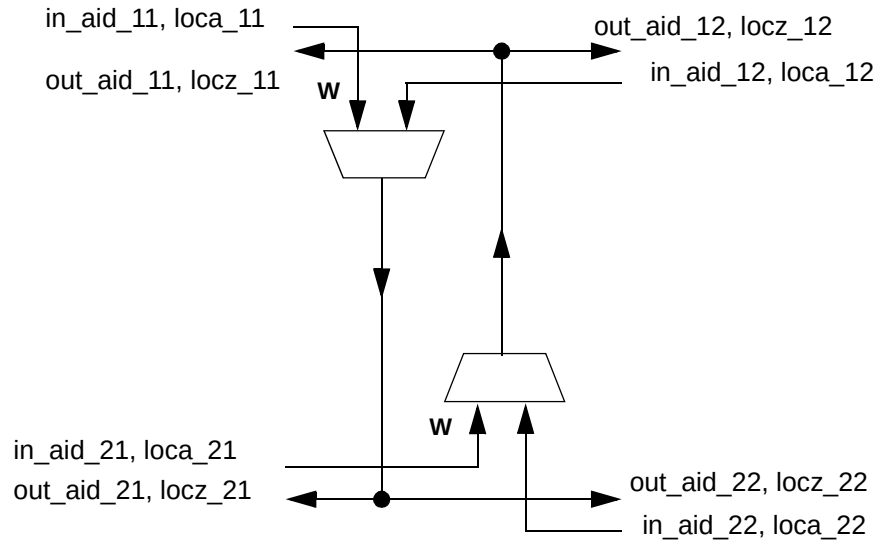


Table 3-97. UPSR (or SNCP Ring), Single Node Interconnection, Same NE

repleg	in_aid	out_aid	in_aid2	appg_aid
1WAYPSW	in_aid_11	out_aid_21	in_aid_12	
1WAYPAW	in_aid_11	out_aid_22	in_aid_12	out_aid_21
1WAYPSW	in_aid_21	out_aid_11	in_aid_22	
1WAYPAW	in_aid_21	out_aid_12	in_aid_22	out_aid_11
1WAYPSP	in_aid_12	out_aid_21	in_aid_11	
1WAYPAP	in_aid_12	out_aid_22	in_aid_11	out_aid_21
1WAYPSP	in_aid_22	out_aid_11	in_aid_21	
1WAYPAP	in_aid_22	out_aid_12	in_aid_21	out_aid_11

For the TL1 response to a **RTRV-CRS** command, the following AID values will be used:

- in_aid_11, out_aid_11: 1-1-u-#-2-1-4
- in_aid_12, out_aid_12: 1-1-u-#-10-1-4
- in_aid_21, out_aid_21: 1-1-u-#-4-1-4
- in_aid_22, out_aid_22: 1-1-u-#-12-1-4.

In the following example, the output lines are ordered for ease of understanding and do not necessarily represent the actual order of the output.

Note: the AIDs for the UPSR, Single Node Interconnection, Same NE Cross Connections were chosen to be on the same shelf so only one **RTRV-CRS** would be needed for this example.

```
RTRV-CRS-STS1:LT-WBM-789:1-1-u-#-ALL-ALL-ALL:123456;

LT-WBM-789 98-01-01 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 - RSVN

RTRV - TACC

NAME

RTRV-EQPT: Retrieve Equipment

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1 and P1

Beginning with Release 3.0, 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 3-98. RTRV-EQPT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Value: ■ System AID ■ Bay AID. The keyword "all" is allowed.

Table 3-98. RTRV-EQPT Input Parameters (cont 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. ■ Controller complex AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

In response to a valid **RTRV-EQPT** command, the following output report is returned:

```

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

```

If the input AID is a controller complex AID, then the output format will be the following:

```

sid date time
M ctag COMPLD
  "<controller complex AID>"
  "<circuit pack AID>:name=x,qual=x"
    ...
  "<circuit pack AID>:name=x,qual=x"
;

```

OUTPUT PARAMETERS

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

Table 3-99. RTRV-EQPT Output Parameters (cont 1 of 5)

Parameter Name	Description
<i>aid</i>	Access Identifier of equipment being reported. See the AID table in OSEG Appendix A.
<i>spec_block</i>	<i>actlname</i> Acceptable Circuit Pack Name (reported for a slot AID). This parameter is available starting in Release 1. This parameter is reported on a line by itself together with <i>actlqual</i>. The line is repeated for all the acceptable circuit packs in the slot. See ENT-EQPT command for the values of circuit pack names. <i>actlqual</i> Acceptable Circuit Pack Qualifier (reported for a slot AID). This parameter is available starting in Release 1. This parameter is reported on a line by itself together with <i>actlname</i>. The line is repeated for all the acceptable circuit packs in the slot. See ENT-EQPT command for the values of circuit pack qualifiers. <i>name</i> Circuit Pack Name, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of <i>holdst</i> is VALID. It is also reported when the input <i>aid</i> is a controller complex AID; the output will list this parameter for each of the circuit packs in the controller complex. See ENT-EQPT command for the values of circuit pack names. The value EXT is used for the extra slots used up by a double-width circuit pack. <i>qual</i> Circuit Pack Qualifier, as stored in the EEPROM on the circuit pack, if the value of <i>holdst</i> is VALID. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID. It is also reported when the input <i>aid</i> is a controller complex AID; the output will list this parameter for each of the circuit packs in the controller complex. See ENT-EQPT command for the values of circuit pack qualifiers. The value EXT is used for the extra slots used up by a double-width circuit pack.

Table 3-99. RTRV-EQPT Output Parameters (cont 2 of 5)

Parameter Name	Description
<i>nvmname</i>	Circuit Pack Name, as stored in the system NVM database. This parameter is available starting in Release 1. This parameter is reported for a slot AID. See ENT-EQPT command for the values of circuit pack names. The value EXT is used for the extra slots used up by a double-width circuit pack.
<i>nvmqual</i>	Circuit Pack Qualifier, as stored in the system NVM database. This parameter is available starting in Release 1. This parameter is reported for a slot AID. See ENT-EQPT command for the values of circuit pack qualifiers. The value EXT is used for the extra slots used up by a double-width circuit pack.
<i>app</i>	Apparatus Code, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of <i>holdst</i> is VALID. This uniquely identifies the specific function provided by the circuit pack. This parameter is an alphanumeric string of up to 9 characters.
<i>ssn</i>	Series Number, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of <i>holdst</i> 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.
<i>clei</i>	Common Language Equipment, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of <i>holdst</i> is VALID. This parameter is a 10-character alphanumeric code.

Table 3-99. RTRV-EQPT Output Parameters (cont 3 of 5)

Parameter Name	Description
<i>sn</i>	Serial Number, as stored in the EEPROM on the circuit pack. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID, if the value of <i>holdst</i> is VALID. This parameter is a 12-character alphanumeric code uniquely identifying each circuit pack and indicating the date and place of manufacture.
<i>swnsize</i>	This parameter is available starting in Release 1.2. System Switch Size. This parameter is reported for a system AID.
Values:	
■ 1152	
■ 4608	
■ 9216.	
<i>edxi1</i>	Electrical DXI(1) Left Attribute. This parameter is available starting in Release 1. This parameter is reported for an I/O shelf AID.
Values:	
■ CONNECTED	
■ NOTCONNECTED.	
<i>edxi2</i>	Electrical DXI(2) Right Attribute. This parameter is available starting in Release 1. This parameter is reported for an I/O shelf AID.
Values:	
■ CONNECTED	
■ NOTCONNECTED.	
<i>bswport</i>	BSW Port Identifier. This parameter is available starting in Release 1. This parameter is reported for an SWIF circuit pack AID.
Values: 1-12 (for 1152 switches) or 1-48 (for 4608 switches).	
<i>oncp</i>	ON Cable Pair Identifier. This parameter is available starting in Release 1. This parameter is reported for an I/O shelf AID.
Values: 1-96	

Table 3-99. RTRV-EQPT Output Parameters (cont 4 of 5)

Parameter Name	Description
	<i>istddflt</i> This parameter is available starting in Release 1.2. Interface Standard Default. This parameter is reported for a system AID. Values: ■ SONET ■ SDH ■ NOTPROVISIONED. <i>trbmdflt</i> This parameter is available starting in Release 1.2. Tributary Mode Default. This parameter is reported for a system AID. Values: ■ ADAPTIVE ■ FIXED ■ NOTPROVISIONED. <i>shlftp</i> Shelf Type. This parameter is available starting in Release 1.3. This parameter is only allowed with a shelf AID. Values: ■ SC ■ SWITCH ■ TYPE2GIO ■ TYPE10GIO. Starting with Release 3.1, the values are: ■ SC ■ SWITCH ■ TYPE2GDEIO For a 2.5G DS3EC1 I/O shelf ■ TYPE2GSEIO For a 2.5G STM1EE4 I/O shelf ■ TYPE10GIO For a 10G I/O shelf. <i>systype</i> System Type. This parameter is available starting in Release 1.2. 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 3-99. RTRV-EQPT Output Parameters (cont 5 of 5)

Parameter Name	Description
	<i>syncrtc</i> System Synchronization Characteristic. This parameter is available starting in Release 3.1. This parameter is reported for a system AID. Values: ■ SONET ■ SDH ■ NOTPROVISIONED.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-EQPT:LT-WBM:system:123456;
LT-WBM 98-01-01 08:00:00
M 123456 COMPLD
"system:syspn=def,swsize=1152"
;
```

The following example shows a retrieval with a bay AID range:

```
RTRV-EQPT:LT-WBM:all:123456;
LT-WBM 98-01-01 08:01:00
M 123456 COMPLD
"SC"
"1"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

DLT - EQPT

ED - EQPT

ED - STATE - EQPT

ENT - EQPT

RTRV - STATE - EQPT

NAME

RTRV - FECOM: Retrieve Far-End Communications

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

Beginning with Release 3.0, 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 3, 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 3-100. RTRV - FECOM Input Parameters (cont 1 of 2)

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

Table 3-100. RTRV-FECOM Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. This identifies the DCC circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>port</i>	This parameter is available starting in Release 1. This parameter indicates the optical (OC-N) port AID that would be using a channel of the DCC circuit pack for far-end communications. If this field is omitted, the report will display the status of all optical ports associated with the DCC circuit pack. Value: Optical port AID.
<i>dcctype</i>	This parameter is available starting in Release 3. This parameter specifies whether the values displayed in the <i>spec_block</i> 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 2, 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 3-101. RTRV-FECOM Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. This identifies the DCC circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
<i>port</i>	This parameter is available starting in Release 1. This parameter indicates the optical (OC-N) port AID that would be using a channel of the DCC circuit pack for far-end communications. Value: Optical port AID.
<i>dcctype</i>	This parameter is available starting in Release 2. This parameter specifies whether the values displayed in the <i>spec_block</i> refer to the LINE or SECTION DCC. Values: ■ SECTION ■ LINE.
<i>spec_block</i>	<i>dccstat</i> This parameter is available starting in Release 1. This parameter indicates whether communication over the DCC channel is enabled or disabled. Values: ■ ENABLE ■ DISABLE

Table 3-101. RTRV - FECOM Output Parameters (cont 2 of 3)

Parameter Name	Description
	Prior to Release 3.0, DISABLE only appears in the output if a port is specified. <i>chanstat</i> This parameter is available starting in Release 3.1. This parameter indicates the operational state of the DCC channel specified by <i>dcctype</i>. 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. <i>lapdrl</i> This parameter is available starting in Release 1. This parameter indicates the LAPD Role of the DCC channel. When the value is the same on both ends, an alarm will be active. Values: ■ USER-SIDE ■ NETWORK-SIDE. Starting with Release 1, this parameter is available for the section DCC. Starting with Release 3, this parameter is available for the line DCC. <i>l2wait</i> This parameter is available starting in Release 3.1. This parameter indicates the LAPD retransmission timer, T200. When this timer expires, retransmission of the frame is initiated. Values: 0.2-25 seconds in 100 msec increments. The initial value is 1 second. Starting with Release 3.1, this parameter is available for the section DCC. Starting with Release 3.1, this parameter is available for the line DCC.

Table 3-101. RTRV-FECOM Output Parameters (cont 3 of 3)

Parameter Name	Description
	<i>l2rex</i> This parameter is available starting in Release 3.1. This parameter sets the LAPD maximum number of retransmissions, N200, allowed. Values: 1 - 16 in increments of 1. The initial value is 3. Starting with Release 3.1, this parameter is available for the section DCC. Starting with Release 3.1, this parameter is available for the line DCC. <i>l2if</i> This parameter is available starting in Release 3.1. This parameter sets the LAPD transmission window parameter, K. K corresponds to the maximum number of outstanding information frames allowed before expecting an acknowledgment. Values: 1 - 127 in increments of 1. The initial value is 7. Starting with Release 3.1, this parameter is available for the section DCC. Starting with Release 3.1, this parameter is available for the line DCC.
	<i>dccprotp</i> This parameter is available starting in Release 3.1. 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

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 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-dccei-cp,1-1-t09-w-04-1:dcstat=enable,lapdrl=user-side"  
;
```

The following is an example of the **RTRV-FECOM** command starting with Release 2.0:

```
RTRV-FECOM:LT-WBM:1-1-#-#-dccei-cp:123456::1-1-t09-w-04-1;  
  
LT-WBM 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-#-#-dccei-cp,1-1-t09-w-04-1,SECTION:dcstat=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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV - FECOM - LAN: *tid:aid:ctag;*

DESCRIPTION

The **RTRV - FECOM - LAN** command can be initiated by users to retrieve the provisioned state of the IAO-LAN interface.

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

INPUT PARAMETERS

Table 3-102. RTRV - FECOM - LAN Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. This identifies the LAN circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
<i>ctag</i>	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 3-103. RTRV-FECOM-LAN Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. This identifies the LAN circuit pack. Value: circuit pack AID. See the AID table in OSEG Appendix A.
<i>spec_block</i>	The following are the spec_block parameters. <i>extllm</i> This parameter is available starting in Release 3.1. External LAN Max Link Metric. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63 The initial value is 14. <i>intllm</i> This parameter is available starting in Release 3.1. Internal LAN Max Link Metric. This is the maximum value of a routing metric assignable to a circuit. Values: 1-63 The initial value is 14.

Table 3-103. RTRV-FECOM-LAN Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>lanstat</i>	This parameter is available starting in Release 1. This parameter indicates whether communication over the external IAO-LAN channel is enabled or disabled. Values: ■ ENABLE ■ DISABLE.
<i>intlanstat</i>	This parameter is available starting in Release 3.1. This parameter indicates whether communication over the internal LAN channel is enabled or disabled. Values: ■ ENABLE ■ DISABLE.
<i>lanrpri</i>	LAN Designated Router Priority. This parameter is available starting in Release 3.1. 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.
<i>extltss</i>	External LAN TARP Storm Suppression. This parameter is available starting in Release 3.1. Values: ■ ENABLE ■ DISABLE (initial value).
<i>intltss</i>	Internal LAN TARP Storm Suppression. This parameter is available starting in Release 3.1. Values: ■ ENABLE ■ DISABLE (initial value).

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 98-01-01 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 BandWidth Manager, Release 1.2

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 3-104. RTRV-FLT-STATE Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	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.
<i>tribcat</i>	Category Of Tributary. Values: ■ LOGICAL Logical tributary. This is the default value. ■ PHYSICAL Physical tributary If <i>aid</i> is specified as a tributary AID, either logical or physical, then a value must be specified for <i>tribcat</i> . If <i>aid</i> is specified as a port AID, then a value must not be specified for <i>tribcat</i> .

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 3-105. RTRV-FLT-STATE Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>aid</i>	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.
<i>aidtype</i>	Access Identifier Type. It has one of the following values: If the <i>aidtype</i> is not listed below, for example an <i>aidtype</i> of STS1 is not listed, then the <i>aidtype</i> field will not be included in the output. ■ T3 A facility-related event at the DS-3 level ■ 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 2) ■ STS1 A facility-related event at synchronous transport signal level 1 (starting in Release 2). ■ STS3C A facility-related event for a concatenated STS3 (starting in Release 2). ■ STS12C A facility-related event for a concatenated STS12 (starting in Release 2).

Table 3-105. RTRV-FLT-STATE Output Parameters (cont 2 of 3)

Parameter Name	Description
	■ STS48C A facility-related event for a concatenated STS48 (starting in Release 3) ■ STM1 A facility-related event for synchronous transport mode 1 (starting in Release 2). ■ STM1E A facility-related event for synchronous transport mode 1, electrical (starting in Release 3.1). ■ STM4 A facility-related event for synchronous transport mode 4 (starting in Release 2). ■ STM16 A facility-related event for synchronous transport mode 16 (starting in Release 2). ■ STM64 A facility-related event for synchronous transport mode 64 (starting in Release 2). ■ VC3 A facility-related event for virtual container 3 (starting in Release 2). ■ VC4 A facility-related event for virtual container 4 (starting in Release 2). ■ VC44C A facility-related event for a concatenated VC signal (starting in Release 2). ■ VC416C A facility-related event for a concatenated VC signal (starting in Release 3).
<i>tribcat</i>	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.

Table 3-105. RTRV-FLT-STATE Output Parameters (cont 3 of 3)

Parameter Name	Description
<i>condtype</i>	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 98-01-01 08:00:00
M 123456 COMPLD
"1-1-u-#-01-3, 0C48:, 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 98-01-01 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 98-01-01 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.

RELATED TL1 MESSAGES

RTRV-ALM

NAME

RTRV-HDR: Retrieve Header

The **RTRV-HDR** TL1 command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): Any

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-HDR: *tid::ctag;*

DESCRIPTION

The **RTRV-HDR** command can be initiated by a user to request that the network element return a normal completion response.

In TL1 terminology, a **parameter block** always follows a colon ':'. Any trailing colons at the end of a command line may be omitted if they do not contain any parameters.

A parameter block can be either a block of position-defined parameters or it can be a **spec_block** (a block of name-defined parameters).

In a block of position-defined parameters, the parameter values are supplied at predefined positions within the parameter block. Two parameter values are separated by a comma. If the default value for a parameter is to be used, a null value is placed in the command line and the position of the parameter is maintained by keeping the comma. When default values are used for parameters at the end of the parameter block, it is not necessary to include all the trailing commas.

In all the TL1 command pages, for position-defined parameter blocks, simplified notation such as:

[d], [e], [f], [g]

is used to represent the following format:

[d][,][e][,][f][,][g]]]

The following notation is also equivalent:

[d], [e], [f][, g]

In a specification block (*spec_block*), every parameter name is followed by an equal sign and the parameter value. The command line does not have to use all of the *spec_block* parameters. Also, *spec_block* parameters can appear in any order.

The word **NULL** is used for some of the parameter values in TL1 messages. For both input and output parameters, **NULL** means that the parameter is omitted.

TL1 messages use YY-MM-DD for the format of a date, meaning that the year only has two digits. This is consistent with Telcordia requirements. Internally, however, the system does use a 4-digit year. When the year appears in a response, the internal 4-digit year is truncated to two digits. When the year appears as an input parameter, for example in the **ED-DAT** command, years in the range 90-99 will represent 1990-1999, and years in the range 00-37 will represent 2000-2037.

Some string-valued parameters, like NENAME, allow any printable character within the double-quoted string (""). On output (**RTRV** and **REPT DBCHG**), the string is surrounded by escaped quotes "\". Those parameters can contain any printable characters, including the TL1 parse characters (; : , "). Spaces and upper/lowercase are also preserved. Using two double-quotes "" will set the parameter to an empty string. But according to GR-831, within a quoted string, a double-quote character is escaped as \" and the backslash is escaped as \\. Within a backslash-quoted string (\"\"), the double-quote character is escaped as \" and the backslash is escaped as \\. Another caveat is that while that parameter can contain any printable character, in networks using a Telcordia OS, the TL1 parse characters (; : , ") should not be used. Particularly, the semicolon (;), less-than (<), and greater-than (>) characters must not be used in the string. (Reference: SR-1665 section 5.5.6.2)

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

INPUT PARAMETERS

Table 3-106. RTRV-HDR Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. This is the currently active name of the network element to which the command is addressed. The <i>tid</i> is a case insensitive character string of up to 20 characters. The allowed ASCII characters are letters "A" through "Z" and "a" through "z", numbers "0" through "9". The <i>tid</i> can contain segments separated by hypens ("-"), but each segment must begin with a letter.

Table 3-106. RTRV -HDR Input Parameters (cont 2 of 2)

Parameter Name	Description
	Beginning with Release 1.3, the slash character '/' is allowed in the <i>tid</i> as a segment separator, like the '-'; i.e., as a separator between segments where each segment must begin with a letter. However, if you are using a Telcordia operations system, the only characters allowed in the TID are alphanumeric characters and hyphens("-"), according to GR-831-CORE. Beginning with Release 3.1, the following characters are allowed in the TID: alphanumeric characters, underscore (" _"), and all the special characters allowed in the pid (password) parameter that are listed in OSEG Appendix A. There are no ordering constraints; the characters can appear in any order.
<i>ctag</i>	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 <i>ctag</i> include strings of up to 6 characters comprised of identifiers (alphanumerics beginning with a letter) or decimal numerals (a string of decimal digits with an optional non-trailing ".").

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 3-107. Notation Conventions (cont 1 of 2)

Notation	Description
<cr>	A carriage return in ASCII.
<lf>	A line feed in ASCII.

Table 3-107. Notation Conventions (cont 2 of 2)

Notation	Description
<>	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 3-108. 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 3-109. RTRV - HDR Output Parameters

Parameter Name	Description
<i>sid</i>	Source Identifier. This is the currently active name of the network element to which the command is addressed.
<i>date</i>	Date output message is generated. This has the format YY-MM-DD (year-month-day).
<i>time</i>	Time output message is generated. This has the format HH:MM:SS (hours:minutes:seconds).
M	This indicates the output message is generated in response to a manual command.
<i>ctag</i>	Correlation Tag. This is included in the command 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.

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 98-01-01 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.

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 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 TID, 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 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-LOG-ALM: Retrieve Log Alarm

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

- WaveStar BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

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 3-110. RTRV-LOG-ALM Input Parameters (cont 1 of 2)

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

Table 3-110. RTRV-LOG-ALM Input Parameters (cont 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 3-111. RTRV - LOG - ALM Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. See the RTRV - ALM command for the syntax and description of this parameter.
<i>aidtype</i>	Access Identifier Type. See the RTRV - ALM command for the syntax and description of this parameter.
<i>ntfcncde</i>	Notification Code. See the REPT ALM command for the syntax and description of this parameter.
<i>condtype</i>	Condition Type. See the RTRV - ALM command for the syntax and description of this parameter.
<i>srveff</i>	Service Effect. See the RTRV - ALM command for the syntax and description of this parameter.
<i>ocrdat</i>	Occurrence Date. See the RTRV - ALM command for the syntax and description of this parameter.
<i>ocrtm</i>	Occurrence Time. See the RTRV - ALM command for the syntax and description of this parameter.
<i>condeff</i>	Condition Effect. See the REPT EVT command for the syntax and description of this parameter.
<i>monval</i>	Monitored value. Only used for TCAs. See the REPT EVT command for the syntax and description of this parameter.
<i>thlev</i>	Threshold Level. See the REPT EVT command for the syntax and description of this parameter.
<i>tmper</i>	Time period. Only used for TCAs. See the REPT EVT command for the syntax and description of this parameter.
<i>conddescr</i>	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 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-013-w-13-1,0C12: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

RTRV-LOG-SECU

NAME

RTRV-LOG-NTFCN: Retrieve Log Notification

The **RTRV-LOG-NTFCN** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

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 3-112. RTRV - LOG - NTFCN Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>startdate</i>	The date for the starting point of the report. The format is YY-MM-DD. If both <i>startdate</i> and <i>starttime</i> are omitted, the entire log is retrieved. Both <i>startdate</i> and <i>starttime</i> must be specified, or both must be omitted.
<i>starttime</i>	The time for the starting point of the report. The format is HH-MM-SS. If both <i>startdate</i> and <i>starttime</i> are omitted, the entire log is retrieved. Both <i>startdate</i> and <i>starttime</i> must be specified, or both must be omitted.
<i>replytype</i>	The Type of Reply. Values: ■ BROWSE (initial value) User Browsing. If the requested <i>startdate</i> and <i>starttime</i> is in the log, those entries and any subsequent log entries are returned. If the requested <i>startdate</i> and <i>starttime</i> is NOT in the log, the first log entry in the log with a timestamp later than the <i>startdate</i> and <i>starttime</i> plus subsequent log entries will be returned. ■ DBSYNC Management system. If the requested <i>startdate</i> and <i>starttime</i> is in the log, those entries and any subsequent log entries are returned. If the requested <i>startdate</i> and <i>starttime</i> 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 3-113. RTRV-LOG-NTFCN Output Parameters

Parameter Name	Description
<i>umb</i>	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: ■ <i>DATE</i> The date of the notification in the form YY-MM-DD. ■ <i>TIME</i> The time of the notification in the form HH-MM-SS.
<i>ccb</i>	Command Code Block. The name of the TL1 command that would cause the change in the user-provisionable parameter.
<i>aid</i>	Access Identifier of the entity that was modified. See the AID table in OSEG Appendix A.
<i>com_block</i>	Common Block of the TL1 command that would cause the change in the user-provisionable parameter.
<i>spec_block</i>	Specific Block of the TL1 command that would cause the change in the user-provisionable parameter.
<i>state_block</i>	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 98-01-01 08:00:00  
M 123456 COMPLD  
"DATE=98-01-01, 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

RTRV-LOG-SECU

NAME

RTRV-LOG-PROTNSW: Retrieve Log Protection Switch

The **RTRV-LOG-PROTNSW** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

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 3-114. RTRV-LOG-PROTNSW Input Parameters (cont 1 of 2)

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

Table 3-114. RTRV - LOG - PROTNSW Input Parameters (cont 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.
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 start-time is in the log, those entries and any subsequent log entries are returned. If the requested startdate and start-time 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 3-115. RTRV - LOG - PROTNSW Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. Value: circuit pack or port AID. For SW log entries, this is the AID of the active circuit pack. See the AID table in OSEG Appendix A.
<i>aidtype</i>	AID type. See the description of the <i>modifier</i> parameter in the REPT EVT message.
<i>condtype</i>	Condition type. See the description of the <i>condtype</i> parameter in the REPT EVT message.
<i>condeff</i>	Condition effect. See the description of the <i>condeff</i> parameter in the REPT EVT message.
<i>ocrdat</i>	Occurrence Date. See the description of the <i>ocrdat</i> parameter in the REPT EVT message.
<i>ocrtm</i>	Occurrence Time. See the description of the <i>ocrtm</i> parameter in the REPT EVT message.

Table 3-115. RTRV - LOG - PROTNSW Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>conddescr</i>	Condition Description. See the description of the <i>conddescr</i> 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 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-040-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 - SECU

RTRV - LOG - USER

NAME

RTRV-LOG-SECU: Retrieve Log Security

The **RTRV-LOG-SECU** command is available beginning in:

- WaveStar BandWidth Manager, Release 3.1

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 3-116. Commands in Security Information Log (cont 1 of 2)

Security-Related Event	Status
ACT - USER	COMPLD or DENY
CANC - USER	COMPLD or DENY
CANC - USER - SECU	COMPLD or DENY
DLT - SECU - USER	COMPLD or DENY
ED - DAT	COMPLD or DENY
ED - NE - SECU	COMPLD or DENY

Table 3-116. Commands in Security Information Log (cont 2 of 2)

Security-Related Event	Status
ED - PID	COMPLD or DENY
ED - USER - SECU	COMPLD or DENY
ENT - USER - SECU	COMPLD or DENY
INIT - SYS	COMPLD or DENY

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

INPUT PARAMETERS

Table 3-117. RTRV - LOG - SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>startdate</i>	The date for the starting point of the report. The format is YY-MM-DD. If both <i>startdate</i> and <i>starttime</i> are omitted, the entire log is retrieved. Both <i>startdate</i> and <i>starttime</i> must be specified, or both must be omitted.
<i>starttime</i>	The time for the starting point of the report. The format is HH-MM-SS. If both <i>startdate</i> and <i>starttime</i> are omitted, the entire log is retrieved. Both <i>startdate</i> and <i>starttime</i> 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 3-118. RTRV-LOG-SECU Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>login_id</i>	Login ID. The login identification of the user. This is a character string of up to 10 characters.
<i>umb</i>	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 3-118. RTRV - LOG - SECU Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>action</i>	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
<i>ccb</i>	Command Code Block. The name of the command.
<i>com_block</i>	Common Block of the Command.
<i>spec_block</i>	Specific Block of the Command.
<i>state_block</i>	State Block of the Command.
<i>ccde</i>	Completion Code. Value: ■ COMPLD or the 4-character error code.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-LOG-SECU:LT-WBM-789::123456;  
  
LT-WBM 98-01-01 08:00:00  
M 123456 COMPLD  
"AIRMAIL:DATE=98-01-02,TIME=07-59-59:NE security variable change:  
ED-NE-SECU::THRSHLD=30,INTRVL=60,AGE=90::COMPLD"  
"MVJOK:DATE=98-01-03,TIME=06-59-59:inactivity timeout::::COMPLD"  
"WHIPPNY:DATE=98-01-04,TIME=09-59-59:invalid passwd:ACT-USER::::  
IDNV"  
;  
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ACT-USER

RTRV-LOG-ALM

RTRV-LOG-NTFCN

RTRV-LOG-PROTNSW

RTRV-LOG-USER

NAME

RTRV-LOG-USER: Retrieve Log User

The **RTRV-LOG-USER** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

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.

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 3-119. RTRV-LOG-USER Input Parameters (cont 1 of 2)

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

Table 3-119. RTRV - LOG - USER Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>startdate</i>	The date for the starting point of the report. The format is YY-MM-DD. If both <i>startdate</i> and <i>starttime</i> are omitted, the entire log is retrieved. Both <i>startdate</i> and <i>starttime</i> must be specified, or both must be omitted.
<i>starttime</i>	The time for the starting point of the report. The format is HH-MM-SS. If both <i>startdate</i> and <i>starttime</i> are omitted, the entire log is retrieved. Both <i>startdate</i> and <i>starttime</i> must be specified, or both must be omitted.
<i>replytype</i>	The Type of Reply. Values: ■ BROWSE (initial value) User Browsing. If the requested <i>startdate</i> and <i>starttime</i> 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 <i>startdate</i> and <i>starttime</i> plus subsequent log entries will be returned. ■ DBSYNC Management system. If the requested <i>startdate</i> and <i>starttime</i> is in the log, those entries and any subsequent log entries are returned. If the requested <i>startdate</i> and <i>starttime</i> 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 3-120. RTRV-LOG-USER Output Parameters

Parameter Name	Description
<i>uid</i>	User ID. Refer to the ACT-USER command for a description of this parameter.
<i>umb</i>	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: ■ <i>DATE</i> The date of the user action in the form YY-MM-DD. ■ <i>TIME</i> The time of the user action in the form HH-MM-SS.
<i>ccb</i>	Command Code Block. The name of the TL1 command.
<i>aid</i>	Access Identifier block of the TL1 command. In some security commands, the aid block can contain a uid.
<i>com_block</i>	Common Block Of The TL1 Command.
<i>spec_block</i>	Specific Block Of The TL1 Command.
<i>state_block</i>	State Block Of The TL1 Command.
<i>ccde</i>	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 98-01-01 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

RTRV-LOG-SECU

NAME

RTRV - LPBK: Retrieve Loopback

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T1

COMMAND PRIORITY

1.

INPUT FORMAT

The syntax for Release 1.0 only is:

RTRV - LPBK: *tid:aid:ctag;*

Starting with Release 1.1, the syntax is:

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 3-121. RTRV - LPBK Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the retrieve loopback command is to act on. Values: ■ ALL

Table 3-121. RTRV - LPBK Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> indicates the port or tributary AID for which the loopback information is being requested. See the AID table in OSEG Appendix A. Values: port or tributary AID.
<i>ctag</i>	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, regardless whether loopbacks are active or not on the specified ports/tributaries, 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 3-122. RTRV - LPBK Output Parameters

Parameter Name	Description		
<i>rate</i>	Rate indicates the cross-connection rate on which the retrieve command is to act on. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3) This parameter is reported for a cross-connect AID.		
<i>aid</i>	Access Identifier. The <i>aid</i> 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.		
<i>spec_block</i>	<table border="1"> <tr> <td><i>crslpbkstat</i></td> <td> Specifies the current cross-connect loopback status on the <i>aid</i>. This parameter is available starting in Release 1. Values: ■ YES ■ NO </td> </tr> </table>	<i>crslpbkstat</i>	Specifies the current cross-connect loopback status on the <i>aid</i>. This parameter is available starting in Release 1. Values: ■ YES ■ NO
<i>crslpbkstat</i>	Specifies the current cross-connect loopback status on the <i>aid</i>. This parameter is available starting in Release 1. Values: ■ YES ■ NO		

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **RTRV-LPBK** command by the network element. This example retrieves the cross connect loopback information on an STS-1 tributary from the network element:

```
RTRV-LPBK-STS1:LT-WBM-789:1-1-#-#-2-1-1:123456;  
  
LT-WBM-789 98-01-01 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 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-U-#-11-1-1:T3:NSFLPBKSTAT=YES,FSFLPBKSTAT=NO"  
;
```

The following example shows the successful completion of the **RTRV-LPBK** command by the network element. This example retrieves the cross connect loopback information on an VC3 tributary from the network element:

```
RTRV-LPBK-VC3:LT-WBM-789:1-1-#-#-2-1-1:123456;  
  
LT-WBM-789 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-U-#-11-1-1:VC3:CRSLPBKSTAT=YES"  
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

OPR-LPBK

RLS - LPBK

NAME

RTRV-MAP-NEIGHBOR: Retrieve Map Neighbor

The **RTRV-MAP-NEIGHBOR** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-MAP-NEIGHBOR : *tid* : [*aid*] : *ctag*;

DESCRIPTION

The **RTRV-MAP-NEIGHBOR** command will retrieve a list of all immediate OSI neighbors to the local network element (NE). This can include other network elements, as well as neighbors on the LAN, such as the CIT (i.e., an End System (ES)) and the Network Communication Controller.

The report will list all neighboring NEs or ESs provisioned as Level 2 (if any) and/or Level 1 NEs or ESs within the local area as well as in other areas. Level 1 NEs or ESs in other areas are marked in the output with dcc=NO.

If there is a link failure between the local NE and its neighboring NE, or if the DCC is disabled, the neighbor NE entry will not appear in the report.

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

INPUT PARAMETERS

Table 3-123. RTRV-MAP-NEIGHBOR Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the description of this parameter.
<i>aid</i>	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.
<i>ctag</i>	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 3-124. RTRV-MAP-NEIGHBOR Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>aid</i>	Datacom Identifier. This is a DCC circuit pack AID. See the AID table in OSEG Appendix A.
<i>rate</i>	The DCC Port Rate. This parameter is shown for a DCC neighbor. Values: see the valid optical values of "rr" for RTRV-rr command.
<i>thru</i>	The type of connectivity between the system and its neighbor. Values: ■ DCC ■ LAN ■ ON. Note that ON is not included in single NSAP NEs.
<i>lpaid</i>	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 3-124. RTRV - MAP - NEIGHBOR Output Parameters (cont 2 of 3)

Parameter Name	Description
<i>spec_block</i>	The following <i>spec_block</i> 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.
<i>localnet</i>	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 - ULSDCC - L3 command for the format of the NSAP.
<i>net</i>	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 - ULSDCC - L3 command for the format of the NSAP.
<i>npaid</i>	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.
<i>tid</i>	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.

Table 3-124. RTRV-MAP-NEIGHBOR Output Parameters (cont 3 of 3)

Parameter Name	Description
<i>nename</i>	Starting with Release 2, this parameter replaces the <i>tid</i> 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).
<i>level2</i>	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.
<i>dcc</i>	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.
<i>dcctype</i>	Channel type. Beginning with Release 2, this parameter specifies whether the values displayed in the <i>spec_block</i> 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.

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 98-01-01 08:00:00  
M 123456 COMPLD  
"1-2-#-#-dccei-cp::localnet=39840F800000000000000000000000000000000000000000a300"  
"1-2-#-#-dccei-cp:ON:net=39840F80000000000000000000000000000000000000000a200,  
level2=N"  
"1-2-#-#-dccei-cp:ON:net=39840F8000000000000000000000000000000000000000a500,  
level2=N"  
"1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-02-1:npaid=1-2-#-#-14-1,  
net=39840F80000000000000000000000000000000000000000a400,  
nename=LT-WBM1, level2=N, dcctype=SECTION"  
"1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-08-1:npaid=1-2-#-#-04-1,  
net=39840F80000000000000000000000000000000000000000a400,  
nename=LT-WBM1, level2=N, dcctype=SECTION"  
"1-2-#-#-dccei-cp,STM16:DCC,1-2-#-#-06-1:npaid=1-2-#-#-04-1,  
net=39840F8000000000000000000000000000000000000000a600,  
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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

Starting in Release 1.0:

RTRV-MAP-NETWORK: *tid*: : *ctag*: : [*level2*] ;

Starting in Release 1.3:

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 3-125. RTRV-MAP-NETWORK Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>level2</i>	IS router level. Value: ■ N (initial value) Local NE provisioned as a Level 1 IS. Report will list only the reachable NEs (including the default Level 2 IS) in the local Level 1 area. Starting with Release 1.3, the parameter <i>level2</i> can also have the value: ■ Y Local NE provisioned as a Level 2 IS. Report will list the reachable Level 2 IS NEs across all areas, plus the Level 1 NEs in the local area.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1.3. 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.

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 3-126. RTRV -MAP -NETWORK Output Parameters

Parameter Name	Description	
<i>spec_block</i>	<i>net</i>	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.
	<i>tid</i>	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.
	<i>level</i>	This field is the Level 1 IS router. Values: ■ Y ■ N.
	<i>level2</i>	Starting with Release 1.3, this field is the level2 IS router. Values: ■ Y ■ N.
	<i>aid</i>	Starting with Release 3.1, 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.

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

i

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

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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2, M2

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-MAP-RING: *tid*: [*aid*]: *ctag*: : [*rid*];

Starting in Release 3 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 3-127. RTRV-MAP-RING Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	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 3-127. RTRV-MAP-RING Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. Value: protection group AID or omitted. See the AID table in OSEG Appendix A. If the <i>aid</i> is omitted, the <i>rid</i> parameter is used to select a ring.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>rid</i>	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 <i>rid</i> is omitted, the <i>aid</i> parameter is used to select a ring. The value of <i>aid</i> and <i>rid</i> cannot both be omitted.
<i>mapsrc</i>	Map source. Starting with Release 3, it indicates the source of the ringmap. The default source of the ringmap is from the DCCEI controller. It shows the ringmap data that was most recently gathered by the DCCEI; if insufficient data is gathered, a one node ringmap is reported. When NVMRING is specified, if there is a valid and complete ringmap in NVM, it will be reported. Otherwise, nothing will be reported. The valid ringmap in NVM is used by the BLSR protection group, even if the ringmap data in the DCCEI is incomplete. Values: ■ DCCEI (initial value) ■ NVMRING

OUTPUT FORMAT

In response to a valid the **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 3-128. RTRV - MAP - RING Output parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier - protection group AID. Value: protection group AID. See the AID table in OSEG Appendix A.
<i>rid</i>	Ring Identification Name. Value: an ASCII string of up to 15 characters from the TID character set.
<i>localnid</i>	Local Node ID. This is an identifier assigned to each NE based on its relative NET value (see <i>net</i> in the <i>spec_block</i> parameter description section of this table). It is the ID of the reporting node. Value: Integer with a range of 0-15.
<i>spec_block</i>	The following <i>spec_block</i> parameters are related to ring map list. <i>nid</i> 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 <i>linkid spec_block</i> parameter, not the second tid/nename. Value: an integer with a range of 0-15.

Table 3-128. RTRV-MAP-RING Output parameters (cont 2 of 2)

Parameter Name	Description
<i>linkid</i>	Link Identifier. The format of this parameter is: <i>linkid</i>=\"{<i>nename</i>,[<i>port</i>],<i>direction</i>},{<i>nename</i>,[<i>port</i>],<i>direction</i>}\" If this parameter is not available, the value is omitted. Where: ■ <i>nename</i> 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. ■ <i>port</i> Value: port AID. If the port AID is not known, this field is omitted. See the AID table in OSEG Appendix A. ■ <i>direction</i> Value: E, W.
<i>continuity</i>	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.
<i>net</i>	This field is the Network Entity Title (NET). The NET corresponds to the first tid/<i>nename</i> listed in the <i>linkid spec_block</i> parameter, not the second tid/<i>nename</i>. 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.

EXAMPLE INPUT/OUTPUT

Refer to the following figure, Open Ring (RingID1), for an example of an open ring. In this open ring, the BLSR RingMap 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

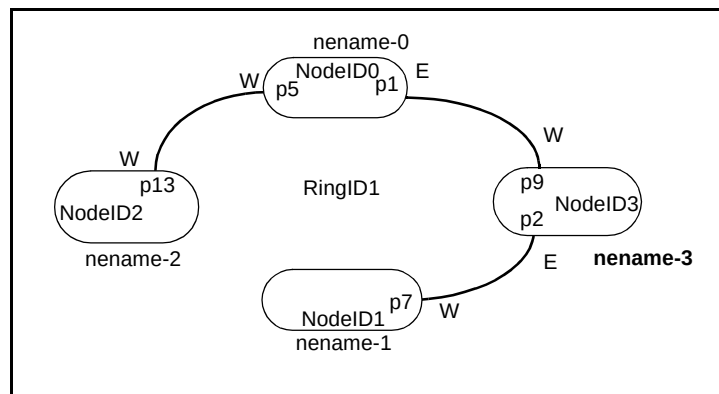
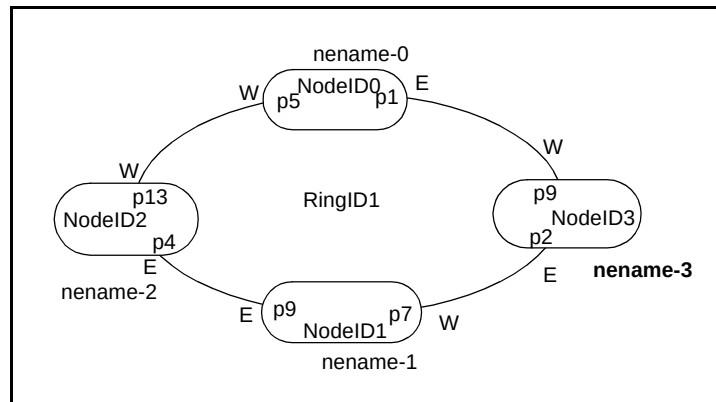


Figure 1. Open Ring (RingID1)

```
RTRV-MAP-RING:NENAME-1:1-1-f01:123456;

NENAME-1 98-01-01 08:00:00
M 123456 COMPLD
    "1-1-f01:RingID1,1:nid=1,linkid=\"{nename-1,1-1-f01-ew-tr4-1,W},
{nename-3,1-1-#-#-tr2-1,E}\"\",continuity=UP,
net=39840F8000000000000000000000000000000000000000000000000a100"
    "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=39840F8000000000000000000000000000000000000000000000000a300"
    "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=39840F8000000000000000000000000000000000000000000000000a000"
    "1-1-f01:RingID1,1:nid=2,linkid=\"{nename-2,,},
{nename-1,,}\"\",continuity=OPEN,
net=39840F8000000000000000000000000000000000000000000000000a200"
;
```

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



The following is an example of the **RTRV-MAP-RING** command for Closed Ring:

```

NENAME-3 98-01-01 08:00:
M 123456 COMPLD
    "1-1-f01:RingID1,3:NID=0,linkid=\"{nename-0,1-1-#-#-tr4-1,E},
{nename-3,1-1-f02-ww-tr2-1,W}\"\",continuity=UP,
net=39840F800000000000000000000000000000000000000000a000"
    "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=39840F800000000000000000000000000000000000000000a300"
    "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=39840F800000000000000000000000000000000000000000a100"
    "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=39840F800000000000000000000000000000000000000000a200"
;

```

ERROR RESPONSES

Refer to the **RTRV-HDR ERROR RESPONSES** section. The requirements listed there also apply to the **RTRV-HDR** 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 BandWidth Manager, Release 3.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-MNTC -*modifier: tid: aid: ctag;*

DESCRIPTION

The **RTRV-MNTC** command can be used to retrieve maintenance signals from physical tributaries.

The information returned by the **RTRV-MNTC** command is similar to the information that is retrieved by the **RTRV-rr** command.

RTRV-MNTC retrieves information for physical tributary, as contrasted with **RTRV-rr** which returns information for logical tributary. Specifying a physical AID lets the user access an entity whether or not that entity is active. Even if a fellow member of a protection group is active, **RTRV-MNTC** lets the user retrieve maintenance signal information from the inactive members. For some parameters, **RTRV-MNTC** returns information for ports.

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

INPUT PARAMETERS

Table 3-129. RTRV - MNTC Input Parameters

Parameter Name	Description
<i>aid</i>	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.
<i>ctag</i>	Correlation Tag. Refer to RTRV - HDR command for input parameter syntax and description of this parameter.
<i>modifier</i>	This parameter is a modifier to the command and may have one of the following values: ■ 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. ■ VC3 This requests maintenance information for virtual container 3. This modifier value is also applicable to VC4 and concatenated tributaries.
<i>tid</i>	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 3-130. RTRV-MNTC Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. Values: ■ Physical tributary AID ■ Port AID
<i>spec_block</i>	
	<i>ptrc</i> 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. Valid for modifier value VC3.

Table 3-130. RTRV-MNTC Output Parameters (cont 2 of 2)

Parameter Name	Description
	The values are: Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). The length displayed is set with the <i>ptrcrfmt</i> parameter. The length of the transmitted path trace, as determined by <i>ptrcwfmt</i>, may be different from the displayed length. If the received trace is smaller than indicated by <i>ptrcrfmt</i>, then it is padded with zeros; if longer then it is truncated.
	<i>siglb</i> 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 98-01-01 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 BandWidth Manager, Release 1.1

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 3-131. RTRV-NE Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	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 3-132. RTRV-NE Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>spec_block</i>	<i>elapstm</i> This parameter is available starting in Release 1.3. Elapsed Time for Automatic Database Update. Values: an integer followed by a letter, signifying the units. For example, 24H means 24 hours. The letter is one of: ■ H Hours ■ D Days ■ W Weeks ■ M Months. The range of the integer is one of: ■ 1-24 hours ■ 1-30 days ■ 1-52 weeks ■ 1-12 months. The initial value is 24 hours.

Table 3-132. RTRV-NE Output Parameters (cont 2 of 2)

Parameter Name	Description
	In releases prior to 3.1, the value is Values: 1-24 (hours). The initial value is 24. <i>duara</i> This parameter is available starting in Release 1.1. Directory User Agent and Registration Agent. Values: ■ ENABLE (initial value) ■ DISABLE.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-NE:LT-WBM::123456;
LT-WBM 98-01-01 08:00:00
M 123456 COMPLD
":elapstm=24"
":duara=ENABLE"
":tl1tcpipgw=DISABLE"
":tunstat=DISABLE"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

ED-NE

NAME

RTRV-NE-SECU: Retrieve Network Element Security

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

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 3-133. RTRV-NE-SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	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 3-134. RTRV-NE-SECU Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>uid</i>	User ID of the user that initiated the RTRV-NE-SECU command. This parameter is available starting in Release 1. Listed below this <i>uid</i> are <i>uids</i> of all the other sessions. If the user from which the RTRV-NE-SECU command was issued is logged on via other sessions, the <i>uid</i> list will contain each other instance of the <i>uid</i> , 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.
<i>spec_block</i>	<i>thrshld</i> Lockout Threshold. This parameter is available starting in Release 1. The maximum number of consecutive invalid login attempts that are allowed by a <i>uid</i> . If the count of invalid login attempts is equal to the threshold, the <i>uid</i> is locked out for <i>intrvl</i> period of time. If a login attempt is successful, the count of invalid login attempts by that <i>uid</i> is reset to zero. Values: 2-99

Table 3-134. RTRV-NE-SECU Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>intrvl</i>	Lockout Period. This parameter is available starting in Release 1. The time during which login attempts using that <i>uid</i> will not be allowed. This occurs when the number of consecutive invalid login attempts by a <i>uid</i> reaches <i>thrshld</i> . When <i>intrvl</i> expires, login attempts will again be allowed from that <i>uid</i> . If this parameter is set to 0 (zero), the lockout feature is disabled. Values (in minutes): 0-99
<i>usrage</i>	User ID Aging Period. This parameter is available starting in Release 3.1. If a <i>uid</i> 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 98-01-01 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 BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

COMMAND PRIORITY

1.

INPUT FORMAT

**RTRV-PM-modifier:tid:aid:ctag::[montype],[monlev],[locn],[dir
n],[tmper],[mondatt],[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.

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

INPUT PARAMETERS

Table 3-135. RTRV-PM Input Parameters (cont 1 of 11)

Parameter Name	Description
modifier	Modifier indicates the cross-connection rate on which the retrieve pm command is to act on. Values: ■ T3

Table 3-135. RTRV-PM Input Parameters (cont 2 of 11)

Parameter Name	Description
	■ EC1 ■ OC3 ■ OC12 ■ OC48 ■ OC192 ■ STS1 ■ STS3C ■ STS12C ■ STS48C ■ STM1 ■ STM4 ■ STM16 ■ STM64 ■ STM1E ■ VC3 ■ VC4 ■ VC44C
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Range is supported up to system or shelf level. See the AID table in OSEG Appendix A. Values: ■ port AID ■ trib AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>montype</i>	This is the monitored parameter type for which data is requested. If the value is omitted, this parameter defaults to ALL .

Table 3-135. RTRV-PM Input Parameters (cont 3 of 11)

Parameter Name	Description
	The following values are for T3 <i>modifier</i>. ■ CVL ■ ESL ■ SESL ■ LOSS-L ■ 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 ■ FC-PFE ■ ALL. The following values are for EC1 <i>modifier</i>. ■ SEFS-S ■ CVL ■ CV-LFE ■ ESL

Table 3-135. RTRV-PM Input Parameters (cont 4 of 11)

Parameter Name	Description
	■ ES-LFE ■ SESL ■ SES-LFE ■ UASL ■ UAS-LFE ■ AISS-L ■ FC-L ■ FC-LFE (line) ■ ALL. The following values are for OC3 and OC12 <i>modifiers</i>: ■ 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

Table 3-135. RTRV-PM Input Parameters (cont 5 of 11)

Parameter Name	Description
	■ ALL. The following values are for OC48 <i>modifier</i> only: ■ LBCN ■ OPT ■ OPR [physical] ■ 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 (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 OC192 <i>modifier</i> only: ■ LBCN

Table 3-135. RTRV-PM Input Parameters (cont 6 of 11)

Parameter Name	Description
	■ OPT ■ OPR [physical] ■ CVS ■ 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

Table 3-135. RTRV-PM Input Parameters (cont 7 of 11)

Parameter Name	Description
	■ CV-PFE ■ ESP ■ ES-PFE ■ SESP ■ SES-PFE ■ UASP ■ UAS-PFE ■ FC-P ■ FC-PFE ■ PPJC-PGEN ■ NPJC-PGEN ■ PPJC-PDET ■ NPJC-PDET ■ ALL. The following values are for STM1, STM1E, STM4, STM16 and STM64 <i>modifiers</i> only: ■ RS-N-ES ■ RS-N-SES ■ RS-N-BBE ■ RS-N-UAS ■ MS-N-ES ■ MS-F-ES ■ MS-N-SES ■ MS-F-SES ■ MS-N-BBE ■ MS-F-BBE ■ MS-N-UAS ■ MS-F-UAS

Table 3-135. RTRV-PM Input Parameters (cont 8 of 11)

Parameter Name	Description
	■ ALL. The following values are for STM64 <i>modifier</i> only: ■ MS-N-FECC ■ MS-N-FECU The following values are for STM16 and STM64 <i>modifiers</i> only: ■ LBCN ■ OPT ■ OPR [physical] The following values are for VC3, VC4, VC44C and VC416C <i>modifiers</i> only: ■ VC-N-ES ■ VC-F-ES ■ VC-N-SES ■ VC-F-SES ■ VC-N-BBE ■ VC-F-BBE ■ VC-N-UAS ■ VC-F-UAS ■ ALL.
<i>monlev</i>	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.

Table 3-135. RTRV-PM Input Parameters (cont 9 of 11)

Parameter Name	Description
<i>locn</i>	Location for which the PM data is monitored. This parameter may be omitted or have one of the following values: ■ NEND Near-End PM data is requested (default). ■ FEND Far-End PM data is requested. This is not applicable to SONET physical and section layers and DS3 line PM. ■ ALL All near-end and far-end data is requested. If the value is omitted, this parameter defaults to NEND.
<i>dirn</i>	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.
<i>tmper</i>	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.
<i>mondatt</i>	Monitored Date. This requests the beginning date of the interval for which the PM data is to be reported. For both values of <i>tmper</i> 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 the current year. Current date is the default value. ■ ALL Current and previous day. If the value is omitted, the default value is used.

Table 3-135. RTRV-PM Input Parameters (cont 10 of 11)

Parameter Name	Description
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 mondatt value. If this parameter is omitted, the PM period for the current time will be reported. Starting in Release 3.0, 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 mondatt value (i.e., all). Where HOD-MOH represents the start of the requested PM retrieval period (hours and minutes) and THOD-TMOH represents the end of the requested PM retrieval period. When the THOD-TMOH is not specified, only the PM data for the retrieval period specified by HOD-MOH will be retrieved. ■ HOD-MOH This specifies the beginning time of day of the requested PM period that was set by tmper parameter. This parameter may be omitted or have one of the following values: Hour Of Day- Minute Of Hour, where HOD ranges from 0 to 23 and MOH is 0, 15, 30 and 45. A leading zero is optional. For example, 00 means 0. If this parameter is omitted, the PM period for the current time will be reported.

Table 3-135. RTRV-PM Input Parameters (cont 11 of 11)

Parameter Name	Description
	■ THOD-TMOH To Hour Of Day-To Minute Of Hour, where THOD ranges from 0 to 23 and TMOH is 0, 15, 30 and 45. A leading zero is optional. For example, 00 means 0. Parameter grouping shall be used when specifying THOD-TMOH. For example, 08-15&04-00 specifies the HOD-MOH and THOD-TMOH of 08-15 and 04-00, 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 <i>mondatt</i> value. If the <i>montm</i> 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 <i>timper</i> value is 1-DAY, the <i>montm</i> parameter will not be used.

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],timper,[mondatt],
[montm]"
. . . . .
. . . . .
. . . . .
;
```

OUTPUT PARAMETERS

Table 3-136. RTRV-PM Output Parameters (cont 1 of 5)

Parameter Name	Description
<i>aid</i>	Access Identifier. Values: ■ port AID ■ trib AID ■ ALL.
<i>montype</i>	Monitored Parameter Type. See <i>montype</i> in the input parameters table.
<i>monval</i>	Monitored Value. This contains the measured value of the parameter specified in <i>montype</i> .
<i>validity</i>	This indicates the validity of the PM data for SONET. It may be omitted or have one of the following values: ■ I-01 Time/date change to shorter interval or earlier minute, hour, day, month, or year or port unit pack (re)insertion or restart of system controller software (in the middle of an interval) or system/SRC out of service or back to service (cold boot) or system/SRC out of service or back to service (warm boot in the middle of an interval) or PU out of service or back to service. ■ I-02 Time/date change to longer interval or earlier minute, hour, day, month, or year or restart of system controller software (at boundary between intervals) or system/SRC out of service or back to service (warm boot at the boundary between intervals). ■ I-03 PM enable/disable or MON/NMON ■ I-05 Concatenated signal format change ■ I-08 SW processing error ■ I-09 Far end parameters inhibited due to near end defects

Table 3-136. RTRV-PM Output Parameters (cont 2 of 5)

Parameter Name	Description
<i>validity</i>	■ I-10 Facility/equipment protection on failure condition ■ I-11 PM start change to shorter interval ■ I-12 PM start change to longer interval ■ I-13 Register initialization ■ I-14 Detected read error of hardware PM register by software ■ I-15 DS3 signal format change from one that supports PM to one that does not ■ I-16 DS3 signal format change from one that does not support PM to one that does ■ I-17 A change in (DS3) SES threshold
	If <i>validity</i> is omitted, the data is valid for that parameter.
	This indicates the validity of the PM data for SDH. It may be omitted or have one of the following values:
	■ I-01 Time/date change to shorter interval or earlier minute, hour, day, month, or year or port unit pack (re)insertion or restart of system controller software (in the middle of an interval) or system/SRC out of service or back to service (cold boot) or system/SRC out of service or back to service (warm boot in the middle of an interval) or PU out of service or back to service. ■ I-02 Time/date change to longer interval or earlier minute, hour, day, month, or year or restart of system controller software (at boundary between intervals) or system/SRC out of service or back to service (warm boot at the boundary between intervals). ■ I-03 PM enable/disable or MON/NMON ■ I-08 SW processing error

Table 3-136. RTRV-PM Output Parameters (cont 3 of 5)

Parameter Name	Description
<i>tca</i>	■ I-09 Far end parameters inhibited due to near end defects ■ I-10 Facility/equipment protection on failure condition ■ I-11 PM start change to shorter interval ■ I-12 PM start change to longer interval ■ I-13 Register initialization ■ I-14 Detected read error of hardware PM register by software ■ I-17 A change in (SDH) SES declaration threshold ■ I-18 Automatic Laser Shutdown If <i>validity</i> is omitted, the data is valid for that parameter. 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.
<i>locn</i>	Location for which the PM data is monitored. This parameter may have one of the following values: ■ NEND Near-End PM data is displayed. ■ FEND Far-End PM data is displayed. This is not applicable to SONET physical and section layers and DS3 line PM.
<i>dirn</i>	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 3-136. RTRV-PM Output Parameters (cont 4 of 5)

Parameter Name	Description
<i>tmper</i>	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.
<i>mondat</i>	Monitored Date. This displays the beginning date of the interval for which the PM data is to be reported. For both values of <i>tmper</i> 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.
<i>montm</i>	Monitored Time. This displays the beginning time of day of the requested PM period that was set by <i>tmper</i> 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, or 45. A leading zero is optional. For example, 00 means 0.
	Starting in Release 3.0, Values: ■ HOD-MOH This displays the beginning time of day of the requested PM period that was set by <i>tmper</i> 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 3-136. RTRV-PM Output Parameters (cont 5 of 5)

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&&04-00 indicates the HOD-MOH and THOD-TMOH of 08-15 and 04-00, 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 <i>montm</i> 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 <i>timper</i> value is 1-DAY, the <i>montm</i> parameter will not be used.

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 98-01-01 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 98-01-01 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 98-01-01 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.

RELATED TL1 MESSAGES

DLT-TCA-PROF

ED-TCA-PROF

ENT-TCA-PROF

RTRV-TCA-ASGNMT

RTRV-TCA-PROF

INIT-REG

NAME

RTRV-PRMTR-DATA: Retrieve Parameter Data

The **RTRV-PRMTR-DATA** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

2.

INPUT FORMAT

RTRV-PRMTR-DATA: *tid::ctag::[amount];*

DESCRIPTION

The **RTRV-PRMTR-DATA** command retrieves information about the databases that are in Non Volatile Memory. Not only is the database identified by its release number, other information such as its state is also given.

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

For the database, there are two partitions: current and previous. The **BACKUP** option of **CPY-MEM** is used to copy the database that is in current NVM to a remote file store. The **RESTORE** option copies a database from a remote file store and places it into previous NVM and then installs it as the working database.

CPY-NVM is used to backup/restore the generic between local file stores.

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

INPUT PARAMETERS

Table 3-137. RTRV-PRMTR-DATA Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>amount</i>	Amount Of Data To Return. If a value is omitted then the current (active) generic is returned. Value: ■ ALL Current, previous, secondary

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 3-138. RTRV-PRMTR-DATA Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>nvm</i>	Non Volatile Memory identifier Values: ■ NVM-A Current NVM Data ■ NVM-B Previous NVM Data ■ NVM-C Secondary NVM Data If <i>amount</i> is not equal to ALL, then only current NVM data is reported.
<i>spec_block</i>	<i>release</i> 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 <i>size</i> 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. <i>backuptime</i> 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 <i>backuptime</i> just before file transfer starts, and then update the value of current NVM's <i>backuptime</i> when the backup finishes. This implies the value of <i>backuptime</i> contained in <i>backupfile</i> at the OS will represent a slightly earlier time than the value contained in current NVM's database. <i>Backuptime</i> will be updated whether or not the file transfer was successful. <i>restoretime</i> 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 <i>restoretime</i>. <i>Restoretime</i> will be updated whether or not the file transfer was successful.

Table 3-138. RTRV-PRMTR-DATA Output Parameters (cont 2 of 3)

Parameter Name	Description
	<i>backupfile</i> This parameter indicates the remote location where the backup is stored. Omitted if never backed up. <i>Backupfile</i> and <i>restorefile</i> formats are described later in this document. The network element will update <i>backupfile</i> before the file transfer starts. Thus, both the source (current NVM) and the destination (EMS or CIT) will have the same value for <i>backupfile</i>. Example: If current NVM is backed up to filex, then <i>backupfile</i> will have the value filex in current NVM and the remote file store. <i>Backupfile</i> will be updated whether or not the file transfer was successful. <i>restorefile</i> This parameter reflects the remote location from where the restore came. Omitted if never restored. <i>Backupfile</i> and <i>restorefile</i> formats are described later in this document. Only database files at the current or previous NVMs will have values for <i>restorefile</i>. <i>Restorefile</i> will be updated whether or not the file transfer was successful. <i>priorbackuptime</i> This parameter gives the time and date when the next-to-last backup to a remote file store finished. <i>priorrestoretime</i> This parameter reflects the time and date when the next-to-last restore from a remote file store finished. <i>priorbackupfile</i> This parameter indicates the remote location where the next-to-last backup is stored. The value reported for secondary NVM will be omitted. <i>priorrestorefile</i> This parameter reflects the remote location where the next-to-last restore came. <i>localbackuptime</i> This parameter gives the time and date when the last backup to the local file store (SEC NVM) finished. Omitted if never backed up. The format is YY-MM-DD HH-MM-SS. When the backup is finished, the network element will write the same value for <i>backupuptime</i> to both the current and secondary NVMs.

Table 3-138. RTRV-PRMTR-DATA Output Parameters (cont 3 of 3)

Parameter Name	Description
	<i>localrestoretime</i> This parameter reflects the time and date when the last restore from a local file store finished. Omitted if never restored. The format is YY-MM-DD HH-MM-SS. <i>state</i> State of the database (see the table captioned "Values of the State Output Parameter"). <i>tid</i> 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*, *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.

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 3-139. Values of the *state* Output Parameter

State	NVM	Description
BACKUP	secondary	Ready to copy to current NVM.
CORRUPT	current previous secondary	Unavailable for invocation or execution. For example, corrupted check sum.
FAILED	current previous secondary	The NVM is failed or missing.
INITIAL	current	Nothing in NVM.
INITIAL	previous	Nothing in previous partition of NVM.
INITIAL	secondary	Nothing on NVM or The database that was shipped with the generic.
INPROGRESS	current	Backup or restore is in progress.
INPROGRESS	previous	Restore is in progress.
INPROGRESS	secondary	Backup, or 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.

The normal database states of secondary NVM are: BACKUP, INPROGRESS, and INITIAL. Most of the time, its *state* is equal to BACKUP, signifying that it contains a backup copy of the database. When reading/writing makes the NVM inaccessible, secondary NVM will have a database state of INPROGRESS. When

the secondary NVM contains the generic's initial database, its state is equal to INITIAL.

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 the secondary NVM is missing, then the output will be as follows:

```
"NVM-C: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 98-01-14 09:45:28  
M 123456 COMPLD  
"NVM-A:release=01.02.04,size=8234567,backuptime=98-01-14 09-00-00,  
restoretime=,backupfile=\"CIT,\\DATA\\98_01_01B\",priorrestorefile=p  
riorbackuptime=98-01-14 08-00-00,priorrestoretime=,priorbackupfile=\"  
CIT,\\data\\98_01_01A\",restorefile=,localbackuptime=98-01-13 08-30-0  
0,localrestoretime=,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

CPY-NVM

RTRV-PRMTR-SFTWR

NAME

RTRV - PRMTR - SFTWR: Retrieve Parameter Software

The **RTRV - PRMTR - SFTWR** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S4

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.

CPY - NVM is used to backup/restore the generic between local file stores.

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

INPUT PARAMETERS

Table 3-140. RTRV-PRMTR-SFTWR Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>amount</i>	Amount Of Data To Return. If a value is omitted then the current (active) generic is returned. Values: ■ ALL Current, previous, secondary

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"
;

```

The *installed* parameter always omitted for secondary NVM.

To install a generic that is in secondary memory, **CPY-NVM** is used to download it to previous NVM, and then **APPLY** is used to install the code in previous NVM to working memory.

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 3-141. RTRV - PRMTR - SFTWR Output Parameters

Parameter Name	Description
<i>nvm</i>	Non Volatile Memory identifier Values: ■ NVM-A Current NVM software ■ NVM-B Previous NVM software ■ NVM-C Secondary NVM software If <i>amount</i> is not equal to ALL, then only current NVM software is reported.
<i>spec_block</i>	<i>release</i> 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. <i>size</i> Program size in bytes. <i>supplier</i> Supplier of generic. Lucent. <i>type</i> See the <i>systype</i> parameter in ACT - USER for the values of this parameter. <i>delivered</i> Date and time when the download finished. The format is YY-MM-DD HH-MM-SS. <i>installed</i> Date and time when the installation started. The format is YY-MM-DD HH-MM-SS. <i>path</i> The source of the download. See below for the format of the <i>path</i> parameter. <i>state</i> State of the program (see the following table entitled "Values of the <i>State</i> Output Parameter"). <i>meta</i> Details about the file structure.

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 the secondary NVM is missing, then the output will be:

```
"NVM-C: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,sssel,tsel,nsap,filename*"
- "EMS,*psel,sssel,tsel,nsap,filename*"
- "SEC"
- "LUCENT"

(This will occur in the SECondary NVM. It also 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)
- *sssel* (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).

After the generic in SEC is copied to the current NVM, the *path* for the current NVM will indicate SEC.

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 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 Network Selector (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 3-142. Values of the *state* Output Parameter (cont 1 of 2)

State	NVM	Description
BACKUP	secondary	Ready to copy to current NVM.
CORRUPT	current previous secondary	Unavailable for invocation or execution, for example, corrupted check sum.
DOWNLOADED	previous	Ready for installation.
FAILED	current previous secondary	NVM is failed or missing.
INITIAL	current	Nothing in NVM.

Table 3-142. Values of the *state* Output Parameter (cont 2 of 2)

State	NVM	Description
INITIAL	previous	Nothing in previous partition of NVM.
INITIAL	secondary	Nothing in NVM or Generic that was distributed by Lucent.
INPROGRESS	current	Installation is in progress or software backup in progress.
INPROGRESS	previous	Download is in progress.
INPROGRESS	secondary	Local sw download/restore in progress or sw backup 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 its state set to PREVIOUS.

The normal states of secondary NVM are: BACKUP, INPROGRESS, and INITIAL. Most of the time, the state is equal to BACKUP, signifying that it contains a backup copy of the generic. When a generic of state BACKUP is copied from secondary to primary NVM, the state on primary NVM is set equal to PREVIOUS. When reading/writing makes the NVM inaccessible, secondary NVM will have a software state of INPROGRESS. When the secondary NVM contains the generic's initial software, the state is equal to INITIAL.

The *meta* information will indicate the NVM's file system size and the number of free blocks. For Release 1.0, these fields will be left blank.

Beginning in Release 1.1, 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. The secondary memory contains a copy of a newer 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 98-01-14 09:35:28
M 123456 COMPLD
"NVM-A:release=01.02.04,size=11423175,supplier=Lucent,type=WaveSta
r_BandWidth_Manager,delivered=98-01-13 08-00-10,installed=98-01-13 08
-45-30,path=\"CIT,01,01,03,39840F8000000000000000008006A11234500,\\WBM
\\generic\\1_2_04.pgm\",state=running,meta=\"fssize=17818,freeblocks=
5456,blocksize=512\""
"NVM-B:release=01.02.03,size=11343236,supplier=Lucent,type=WaveSta
r_BandWidth_Manager,delivered=98-01-09 18-30-10,installed=98-01-09 22
-45-30,path=\"EMS,01,01,02,39840F8000000000000000008006A1118500,/WBM/
generic/1_2_03.pgm\",state=previous,meta=\"fssize=17112,freeblocks=61
62,blocksize=512\""
"NVM-C:release=01.02.05,size=11623175,supplier=Lucent,type=WaveSta
r_BandWidth_Manager,delivered=98-01-16 12-25-50,installed=,path=\"LUC
ENT\",state=initial,meta=\"fssize=17112,freeblocks=12342,blocksize=51
2\""
;
```

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

CPY-NVM

RTRV-PRMTR-DATA

NAME

RTRV-PROTN-GRP: Retrieve Protection Group

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-PROTN-GRP : *tid* : [*aid*] : *ctag* : : *prototype* , [*rid*] ;

Starting in Release 3.1, **RTRV-PROTN-GRP** has the following input format:

RTRV-PROTN-GRP : *tid* : [*aid*] : *ctag* : : *prototype* , [*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 3-143. RTRV-PROTN-GRP Input Parameters (cont 1 of 3)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. If <i>rid</i> is specified, then <i>aid</i> can be omitted. For each protection group type, <i>aid</i> can be a protection group AID. See <i>prototype</i> for a list of the protection group types. For the BSW group, the ebswgrpall <i>aid</i> is allowed. For some protection group types, a range of values can be specified for <i>aid</i>. Also, for some protection groups <i>aid</i> 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: ■ 1+1: <i>bay-shelf-oall</i> (starting in Release 1.2) ■ 2F: <i>bay-shelf-tall</i> (starting in Release 2) ■ 4F: <i>bay-shelf-fall</i> (starting in Release 1.1) ■ PATHDRI: <i>bay-shelf-##-slot-port-all</i> (starting in Release 3.1) Starting in Release 3.0, <i>slot</i> and <i>port</i> can also have the value all. Starting in Release 3.0, <i>slot</i> and <i>port</i> can also have the value all. Non protection group AIDs can be specified for the following types: ■ 1+1: port AID (starting in Release 1.2) ■ 2F: port AID (starting in Release 2) ■ 4F: port AID (starting in Release 1.1) ■ EQPTTMG: circuit pack AID ■ EQPTSWFBR: circuit pack AID ■ EQPTIOFBR: circuit pack AID For example, 1-1-##-swif10-cp

Table 3-143. RTRV-PROTN-GRP Input Parameters (cont 2 of 3)

Parameter Name	Description
	■ EQPTCTL: controller complex AID, circuit pack AID. To address a controller in the system control shelf, use either ctlcpx0 or ctlcpx1. To address a controller in an IO shelf, use either bay-shelf-#-#-ctlmem0-cp or bay-shelf-#-#-ctlmem1-cp ■ PATHDRI Input tributary AID (starting in Release 2.0). 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 3.1) This parameter can only be specified for path protection groups. If prototype 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.
prototype	Protection Type. Values: ■ 1+1 (starting in Release 1.2) 1+1 is for optical protection. ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)

Table 3-143. RTRV-PROTN-GRP Input Parameters (cont 3 of 3)

Parameter Name	Description
	■ PATHDRI (starting in Release 3.1) DRI/Path Protection Group refers to a protection group which is autonomously established at the creation of a Path Protected cross-connection. The protection group is comprised of a working and a protection leg, each of which is identified by the designated source tributaries. The protection group itself is identified by the destination tributary. ■ 1xNELEC ■ EQPTDCC (starting in Release 3.1) ■ EQPTTMG ■ EQPTSWFBR Switch fabric protection. This protection type refers to the BSW packs. ■ EQPTIOFBR I/O fabric protection. This is only for the BWM and refers to the switch/576, 768 plus the swifnn circuit packs. ■ EQPTCTL
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 prototype values: Starting in Release 3.0, 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). ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)

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, then the following response is returned:

```

sid date time
M  ctag COMPLD
;

```

This means that the AID is unprotected.

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 3-144. RTRV-PROTN-GRP Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Protection group AID. If the input AID is not in a protection group, then no <i>spec_block</i> 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 3-144. RTRV-PROTN-GRP Output Parameters (cont 2 of 2)

Parameter Name	Description
CML	Starting in Release 3.1, when the input specifies prototype as PATH-DRI (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 <i>spec_block</i> parameters is not important): "aid,CML:actunit=<i>actunit</i>,actunitaid=<i>actunitaid</i>,cst=<i>cst</i>,swreq=<i>swreq</i>,protnsiglvl=<i>protnsiglvl</i>,wkgsiglvl=<i>wkgsiglvl</i>" aid,CML:actunit=<i>actunit</i>,actunitaid=<i>actunitaid</i>,cst=<i>cst</i>,swreq=<i>swreq</i> 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: <i>dripathn</i>, <i>hte</i>, <i>prototype</i>, <i>rme</i>, <i>wkg</i>, <i>protn</i>. Some of these parameters may not be available in a specific release. See the individual parameter descriptions for details.
<i>spec_block</i>	See the following table for all <i>spec_block</i> parameters.

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 1 of 13)

Parameter	Description/PROTYPE	Value
<i>actunit</i>	Active Unit State. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.2) ■ PATHDRI (starting in Release 3.1) ■ EQPTDCC (starting in Release 3.1) ■ EQPTTMG ■ EQPTSWFBR ■ EQPTIOFBR For protection type EQPTIOFBR, there are two sets of packs as identified by cp0 and cp1. <i>Actunit</i> indicates which set is active. ■ EQPTCTL	WKG, PROTN WKG, PROTN 0, 1 0, 1 0, 1 0, 1 0, 1

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 2 of 13)

Parameter	Description/PROTYPE	Value
<i>actunitaid</i>	Active Unit AID. This parameter is applicable to the following prototypes: ■ PATHDRI (starting in Release 3.1)	logical tributary AID
<i>actunitfe</i>	Far-End Incoming Req Selection. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.3)	WKG, PROTN, NONE, INVALID
<i>actunitne</i>	Near-End Outgoing Req Selection. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.3)	WKG, PROTN, NONE
<i>adjppl</i>	Adjunct Path Protection List. This parameter is applicable to the following prototypes: ■ PATHDRI (starting in Release 3.1). The adjuncts are identified via their output AID.	Ampersand (&) separated list of logical tributaries
<i>aps</i>	Far-End Incoming APS Message. This parameter is applicable to the following prototypes:	

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 3 of 13)

Parameter	Description/PROTYPE	Value
	■ 1+1 (starting in Release 1.2) 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
<i>apsoride</i>	APS Override. For APS behavior, this overrides the value of <i>iwtype</i>. It is only applicable if <i>protocol</i> has a value of 1+1_BIDIR. For other values of <i>protocol</i>, <i>apsoride</i> cannot be modified or retrieved. If <i>protocol</i> is changed from a value of 1+1_BIDIR, then <i>apsoride</i> is reset to a value of NONE. This parameter is only valid when <i>protype</i> has a value of 1+1.	SONET, SDH, NONE (initial value)
<i>apsout</i>	Near-End Outgoing APS Message. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.3)	see <i>aps</i> (INV does not apply)
<i>cp0</i>	The member 0 of an equipment protection group. This parameter is applicable to the following prototypes: ■ EQPTTMG ■ EQPTSWFBR	circuit pack AID circuit pack AID (note 1)

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 4 of 13)

Parameter	Description/PROTYPE	Value
	■ EQPTIOFBR ■ EQPTCTL ■ EQPTDCC (starting in Release 3.1)	circuit pack AID (note 1) controller complex AID or circuit pack AID For the SC shelf this will be either ctlcp0 or ctlcp1. For an IO shelf this will be either bay-shelf-#-#- ctlmem0-cp or bay- shelf-#-#-ctlmem1-cp. circuit pack AID
<i>cp1</i>	The member 1 of an equipment protection group.	See <i>cp0</i> .
<i>cst</i>	Constituent Signal Type. This parameter is applicable to the following prototypes: ■ PATHDRI	Some values may not be applicable for a particular release. STS1, STS3C, STS12C, STS48C. VC3, VC4, VC44C, VC416C
<i>dcclm- sprotmd</i>	DCC line/MS protection mode. Starting in Release 3.1, this parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 3.1)	DISABLE is the initial value. ENABLE, DISABLE
<i>dccsr- sprotmd</i>	DCC Sect/RS protection mode. Starting in Release 3.1, this parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 3.1)	DISABLE is the initial value. ENABLE, DISABLE
<i>eactunit</i>	East Active Unit State. ■ 4F (starting in Release 1.1)	WKG, PROTN
<i>eapschst</i>	East Incoming APS message, Channel Status. This parameter is applicable to the following prototypes:	For the rows below, the first entry is the value, the second a description.

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 5 of 13)

Parameter	Description/PROTYPE	Value
	■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)	IDLE Idle BRIDGED Bridged BANDS Bridged & Switched XTRFC Extra Traf- fic NOTUSED Not Used RDIL RDI-L AISL AIS-L
<i>eapsdnid</i>	East Incoming APS Message, Destination nid. This parameter is applicable to the fol- lowing prototypes: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)	0-15 0-15
<i>eapsprotn</i>	East Incoming APS Message, Protection. This parameter is applicable to the follow- ing prototypes: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)	0, 1 Short, Long 0, 1 Short, Long
<i>eapssnid</i>	East Incoming APS Message, Source nid.	See <i>eapsdnid</i> .
<i>eapssw</i>	East Incoming APS message, Switch Prior- ity. This parameter is applicable to the fol- lowing prototypes:	For the rows below, the first entry is the value, the second a description.

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 6 of 13)

Parameter	Description/PROTYPE	Value
	■ 2F (starting in Release 2)	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.
	■ 4F (starting in Release 1.1)	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.
<i>east</i>	East Group Member. This parameter is applicable to the following prototypes: ■ 2F (starting in Release 2)	port AID

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 7 of 13)

Parameter	Description/PROTYPE	Value
<i>eastprotn</i>	East Protection Group Member. This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1)	port AID
<i>eastwkg</i>	East Working Group Member. This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1)	port AID
<i>elprotnsw</i>	East Last Protection Switch Attempt. This parameter is applicable to the following prototypes: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)	SUCCESS, DENY, FAILURE SUCCESS, DENY, FAILURE
<i>eswreq</i>	East Switch Request State. This parameter is applicable to the following prototypes: ■ 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

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 8 of 13)

Parameter	Description/PROTYPE	Value
	■ 4F (starting in Release 1.1) Some values may not be available for a particular release.	LPA LP - All Spans LPS LP - Span LSR LS - Ring LSS LS - 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
<i>hte</i>	Holdoff Timer Enable. This parameter is applicable to the following prototypes: ■ PATHDRI (starting in Release 3.1)	The initial value is determined by the value of <i>ppbv</i> as set via ENT-CRS ENABLE, DISABLE
<i>iwtype</i>	Interworking Type. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.2)	SONET, SDH SONET, SDH SONET, SDH
<i>lckactst</i>	Lockout Active Status. This parameter is applicable to the following prototypes: 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 <i>swreq</i>.	

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 9 of 13)

Parameter	Description/PROTYPE	Value
	■ 1xNELEC	circuit pack aid (note 1)
<i>pgrate</i>	Protection Group Rate. This parameter is applicable to the following prototypes: ■ 1+1 (starting in 2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 2)	Some values may not be applicable for a particular release. OC3, OC12, OC48, OC192, STM1, STM4, STM16, STM64 See 1+1. See 1+1.
<i>ppgname</i>	Path Protection Group Identification Name. Storage and retrieval of the <i>ppgname</i> is case sensitive, but actual use of the <i>ppgname</i> to determine the corresponding protection group is case insensitive. This parameter is applicable to the following prototypes: ■ PATHDRI (starting in Release 2.0)	ASCII string of up to 24 characters from the TID character set
<i>protn</i>	Protection Group Member. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.2) ■ PATHDRI (starting in Release 3.1) ■ 1xNELEC ■ A value of \"\" denotes an empty value.	port AID logical tributary AID circuit pack AID \"\"
<i>protnsiglvl</i>	Signal Level of Protection Group Member. This parameter is applicable to the following prototypes:	See <i>wkgsiglvl</i> .
<i>protnmode</i>	Protection Switch Mode: This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1.2)	LOOPBACK, SHORTENED

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 10 of 13)

Parameter	Description/PROTYPE	Value
<i>protocol</i>	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, <i>ilpod</i>, applies to the 1xNOPT protection switch type. 1+1 (starting in Release 3) Some values may not be available for a particular release.	1+1_UNI, 1+1_BIDIR, 1+1_OPTM
<i>protype</i>	Protection type. This parameter is applicable to the following prototypes: Starting in Release 1.2 Starting in Release 2 Starting in Release 1.1 Starting in Release 3.1	1+1 2F 4F PATHDRI 1xNELEC EQPTTMG EQPTSWFBR EQPTIOFBR EQPTCTL EQPTDCC
<i>prounit</i>	Protected Unit. The circuit pack that is being protected. This parameter is applicable to the following prototypes: ■ 1xNELEC	circuit pack AID
<i>rid</i>	Ring Identification Name. Storage and retrieval of the <i>rid</i> is case sensitive, but actual use of the <i>rid</i> to determine the corresponding protection group is case insensitive. This parameter is applicable to the following prototypes:	

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 11 of 13)

Parameter	Description/PROTYPE	Value
	■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1) Starting in Release 3.0	ASCII string of up to 15 characters from the TID character set. ASCII string of up to 15 characters from the TID character set 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).
<i>ringndst</i>	Ring Node APS State. This parameter is applicable to the following prototypes: ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1)	IDLE, SWITCHING, PASSTHROUGH, SUSPENDED-IDLE SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH IDLE, SWITCHING, PASSTHROUGH, SUSPENDED-IDLE SUSPENDED-SWITCHING, SUSPENDED-PASSTHROUGH
<i>rme</i>	Revertive Mode Enable. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.2) ■ PATHDRI (starting in Release 3.1)	ENABLE, DISABLE. The initial value is DISABLE. ENABLE, DISABLE. The initial value is determined by the value of <i>ppbv</i> as set via ENT-CRS.

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 12 of 13)

Parameter	Description/PROTYPE	Value
<i>swreq</i>	Switch Request State. This parameter is applicable to the following prototypes: ■ 1+1 (starting in R1.2) ■ PATHDRI (starting in Release 3.1) ■ 1xNELEC ■ EQPTTMG ■ EQPTSWFBR ■ EQPTIOFBR	See next table. See next table. See next table. Note: the presence or absence of LOkout is indicated via <i>lckactst</i> . See next table. See next table. See next table.
<i>swtr</i>	Span Wait to Restore. This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1.1)	0-12 and 99 (which represents infinity). The units of <i>swtr</i> are minutes.
<i>wactunit</i>	West Active Unit State	See <i>eactunit</i> .
<i>wapschst</i>	West Incoming APS Message, Channel Status	See <i>eapschst</i> .
<i>wapsdnid</i>	West Incoming APS Message, Destination nid	See <i>eapsdnid</i> .
<i>wapsprotn</i>	West Incoming APS Message, Protection	See <i>eapsprotn</i> .
<i>wapssnid</i>	West Incoming APS Message, Source nid	See <i>eapssnid</i> .
<i>wapssw</i>	West Incoming APS Message, Switch Priority	See <i>eapssw</i> .
<i>west</i>	West Group Member	See <i>east</i> .
<i>westprotn</i>	West Protection Group Member	See <i>eastprotn</i> .
<i>westwkg</i>	West Working Group Member	See <i>eastwkg</i> .
<i>wkg</i>	Working Group Member. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.2) ■ PATHDRI (starting in Release 3.1)	port AID logical tributary AID

Table 3-145. RTRV-PROTN-GRP *spec_block* Parameters (cont 13 of 13)

Parameter	Description/PROTYPE	Value
	■ 1xNELEC ■ A value of \" denotes an empty value.	circuit pack AID (note 1) \"
<i>wkgsiglvl</i>	Signal Level of wkg. This parameter is applicable to the following prototypes: ■ 1+1 (starting in Release 1.2) ■ PATHDRI (starting in Release 3.1)	SF, SD, NONE SF, SD, NONE
<i>wlprotnsw</i>	West Last Protection Switch Attempt	See <i>elprotnsw</i> .
<i>swsreq</i>	West Switch Request State	See <i>eswreq</i> .
<i>wtr</i>	Wait to Restore. This parameter is applicable to the following prototypes: ■ 1+1 (starting in R1.2) ■ 2F (starting in Release 2) ■ 4F (starting in Release 1.1) ■ 1xNELEC	0-12 and 99. 0-12 and 99. 0-12 and 99. 0-12 and 99 (which represents infinity). The units of <i>wtr</i> 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 types 1xNELEC and 1xNOPT, the parameter *lckactst* indicates whether or not the entity is in a lockout (LO) state.

Table 3-146. *swreq* Values (cont 1 of 2)

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	
1xNOPT		Yes		Yes	Yes	Yes	Yes		Yes	
CONSTITUENTPATH	Yes	Yes		Yes	Yes	Yes	Yes		Yes	

Table 3-146. *swreq* Values (cont 2 of 2)

Protection Group Type	LO	FS	EQPT FAILED	SF	SD	MS	WTR	DNR	NR	FOP
EQPTTMG EQPTSWFBR EQPTIOFBR		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 98-01-01 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 98-01-01 08:00:00
M 123456 COMPLD
"1-1-o01:protype=1+1,wkg=1-1-#-#-13-1,protn=1-1-#-#-14-1,actunit=
wkg,aps=nr,swreq=nr,wtr=5"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

DLT-PROTN-GRP

RTRV-PROTN-GRP
BWM TL1 Message Details

RTRV-PROTN-GRP
WaveStar™ BandWidth Manager R3.1

ED-PROTN-GRP

ENT-PROTN-GRP

ED-PROTN-TYPE

RTRV-PROTN-TYPE

NAME

RTRV-PROTN-LST: Retrieve Protection Group List

The **RTRV-PROTN-LST** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-PROTN-LST: *tid:aid:ctag::[prototype]*;

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 3-147. RTRV-PROTN-LST Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. Value: ■ shelf AID A range of shelves is not permitted.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 3-147. RTRV-PROTN-LST Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>prototype</i>	Protection Type. If a value is not specified for <i>prototype</i> then a list of all protection groups for the specified shelf will be returned. Values: ■ 1+1 ■ 2F ■ 4F (starting in Release 1.3) ■ PATHDRI (starting in Release 3.1) ■ EQPTDCC (starting in Release 3.1) ■ EQPTTMG ■ EQPTSWFBR ■ EQPTIOFBR ■ EQPTCTL

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 ***prototype*** 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 3-148. RTRV-PROTN-LST Output Parameters

Parameter Name	Description
<i>aid</i>	Protection group AID.
<i>spec_block</i>	See the following table for all <i>spec_block</i> parameters.

Table 3-149. RTRV-PROTN-LST *Spec_block* Parameters (cont 1 of 2)

Parameter	Description / PROTYPE	Value
<i>cp0</i>	The member 0 of an equipment protection group. This parameter is applicable to the following prototypes: ■ EQPTTMG ■ EQPTSWFBR ■ EQPTIOFBR ■ EQPTCTL ■ EQPTDCC (starting in Release 3.1)	circuit pack AID circuit pack AID circuit pack AID (note 1) controller complex AID or circuit pack AID For the SC shelf this will be either ctlcpx0 or ctlcpx1. For an IO shelf this will be either bay-shelf-##-ctlmem 0-cp or bay-shelf-##-ctlmem 1-cp. circuit pack AID
<i>cp1</i>	The member 1 of an equipment protection group.	See <i>cp0</i>
<i>east</i>	East Group Member. This parameter is applicable to the following prototypes: ■ 2F	port AID
<i>eastprotn</i>	East Protection Group Member. This parameter is applicable to the following prototypes:	

Table 3-149. RTRV-PROTN-LST *Spec_block* Parameters (cont 2 of 2)

Parameter	Description / PROTYPE	Value
	■ 4F (starting in Release 1.3)	port AID
<i>eastwkg</i>	East Working Group Member. This parameter is applicable to the following prototypes: ■ 4F (starting in Release 1.3)	port AID
<i>protn</i>	Protection Group Member. This parameter is applicable to the following prototypes: ■ 1+1 ■ PATHDRI (starting in Release 3.1) ■ 1xNELEC	port AID logical tributary AID circuit pack AID
<i>protype</i>	Protection type. This parameter is applicable to the following prototypes:	1+1 2F 4F PATHDRI EQPTTMG EQPTSWFBR EQPTIOFBR EQPTCTL EQPTDCC
<i>west</i>	West Group Member	See <i>east</i>
<i>westprotn</i>	West Protection Group Member	See <i>eastprotn</i>
<i>westwkg</i>	West Working Group Member	See <i>eastwkg</i>
<i>wkg</i>	Working Group Member. This parameter is applicable to the following prototypes: ■ 1+1 ■ 1xNELEC ■ PATHDRI (starting in Release 3.1)	port AID circuit pack AID (note 1) logical trib AID

Note 1: The output will consist of an ampersand (&) separated list of entities.

EXAMPLE INPUT/OUTPUT

The following example retrieves 1xNELEC protection group information for bay 1, shelf 1:

```
RTRV-PROTN-LST:LT-WBM:1-1:123456::1xnelec;  
  
LT-WBM 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-eds3ec1grp:prototype=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 98-01-01 08:00:00  
M 123456 COMPLD  
"1-1-o01:prototype=1+1,wkg=1-1-#-#-13-1,protn=1-1-#-#-14-1"  
"1-1-o21:prototype=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

RTRV-PROTN-GRP

DLT-PROTN-GRP

ED-PROTN-GRP

ENT-PROTN-GRP

NAME

RTRV-PROTN-PPG: Retrieve Path Protection Group names

The **RTRV-PROTN-PPG** command is available beginning in:

- WaveStar BandWidth Manager, Release 3.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-PROTN-PPG: *tid::ctag*;

DESCRIPTION

The **RTRV-PROTN-PPG** command retrieves information about all path protection groups that have path protection group names. For each named path protection group, the name and the input ports of the protection group are retrieved. The retrieve spans the entire network element. The output is sorted by path protection group name.

The value of the name (*ppgname*) is set when **ENT-CRS** is used to establish the connections for the path protection group. This value can be modified by **ED-PROTN-GRP**. Path protection group names can be used by **OPR-PROTNSW** and **RLS-PROTNSW** to operate on all path protection groups that have a specified path protection group name.

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

INPUT PARAMETERS

Table 3-150. RTRV-PROTN-PPG Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	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 3-151. RTRV-PROTN-PPG Output Parameters

Parameter Name	Description
<i>ppgnmavl</i>	Number of available protection group names. The network element has a limited number of protection group names. This parameter indicates how many are left.
<i>ppgname</i>	Path Protection Group Name.
<i>aid</i>	Input port AID for the protection groups that are identified by <i>ppgname</i> . 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 two path protection group names.

```
RTRV-PROTN-PPG:LT-WBM::123456;

LT-WBM 98-01-01 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 - PROTN SW

RLS - PROTN SW

RTRV - PROTN - GRP

NAME

RTRV-PROTN-TYPE: Retrieve Protection Group Type

The **RTRV-PROTN-TYPE** command is available beginning in:

- WaveStar BandWidth Manager, Release 3.1

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-PROTN-TYPE: *tid::ctag::prototype;*

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 3-152. RTRV-PROTN-TYPE Input Parameters

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

Table 3-152. RTRV-PROTN-TYPE Input Parameters

Parameter Name	Description
<i>prototype</i>	Protection Type. Value: ■ 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
  "prototype:spec_block"
    ...
    ...
  "prototype: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 3-153. RTRV-PROTN-TYPE Output Parameters

Parameter Name	Description
<i>prototype</i>	Protection Type. Values: ■ PATHDRI
<i>spec_block</i>	<i>plwtr</i> Path level wait-to-restore. This parameter is only applicable when <i>prototype</i> is PATHDRI. Values: ■ 0-12 and 99 (which represents infinity) The dimensions of <i>plwtr</i> are minutes.

Table 3-153. RTRV-PROTN-TYPE Output Parameters

Parameter Name	Description
	<i>plhtmr</i> Path level holdoff timer This parameter is only applicable when <i>prototype</i> is PATHDRI. Values: ■ 0-100 (steps of 100 ms, implying 10 sec range)

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 98-01-01 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

RTRV-PROTN-GRP

RLS-PROTNSW

NAME

RTRV-rr: Retrieve rr

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

Table 3-154. Syntax of **RTRV-rr**

Command Syntax
RTRV-ALL : <i>tid:aid:ctag</i> ; (starting in Release 1.2)
RTRV-EC1 : <i>tid:aid:ctag</i> ; (starting in Release 2)
RTRV-OC3 : <i>tid:aid:ctag</i> ; (starting in Release 1.2)
RTRV-OC12 : <i>tid:aid:ctag</i> ; (starting in Release 1.1)
RTRV-OC48 : <i>tid:aid:ctag</i> ; (starting in Release 1)
RTRV-OC192 : <i>tid:aid:ctag</i> ; (starting in Release 2)
RTRV-STM1 : <i>tid:aid:ctag</i> ; (starting in Release 1.2)
RTRV-STM1E : <i>tid:aid:ctag</i> ; (starting in Release 3.1)
RTRV-STM4 : <i>tid:aid:ctag</i> ; (starting in Release 1.3)
RTRV-STM16 : <i>tid:aid:ctag</i> ; (starting in Release 1.2)
RTRV-STM64 : <i>tid:aid:ctag</i> ; (starting in Release 2)
RTRV-STS1 : <i>tid:aid:ctag</i> ; (starting in Release 1.2)
RTRV-T3 : <i>tid:aid:ctag</i> ; (starting in Release 1.3)
RTRV-VC3 : <i>tid:aid:ctag</i> ; (starting in Release 1)

DESCRIPTION

The **RTRV-rr** command can be used to retrieve all parameters related to optical and electrical ports, and to retrieve tributary parameters. For external input/output timing reference port status, see the **RTRV-SYNCN** command.

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

INPUT PARAMETERS

Table 3-155. RTRV-rr Input Parameters (cont 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 1.2). 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 2) 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 1.2)
OC12	aid	See OC48 (starting in Release 1.1)
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 2)

Table 3-155. RTRV-rr Input Parameters (cont 2 of 2)

rr	Parameter Name	Description
STM1	aid	Access Identifier.Values: ■ Port AID of an SDH port. ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
STM1E	aid	See STM1.
STM4	aid	See STM1 (starting in Release 1.3)
STM16	aid	See STM1 (starting in Release 1.2)
STM64	aid	See STM1 (starting in Release 2)
STS1	aid	Access Identifier (starting in Release 1). 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 STS12c tributaries.]
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.
VC3	aid	Access Identifier (starting in Release 1). Values: ■ Tributary AID of an SDH tributary. ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
	ctag	Correlation Tag. Refer to RTRV-HDR command for input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV-rr** command completes successfully, then the following normal completion response is returned:

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

The output of **RTRV-ALL** will be the concatenation of all the individual **RTRV-rr** responses that apply.

OUTPUT PARAMETERS

Refer to the **RTRV-HDR** command **OUTPUT PARAMETERS** section for a normal completion response. The output parameters listed there also apply to the **RTRV-rr** command. Additional parameters that specifically apply to this command are defined below.

The table that follows describes the output parameters for **RTRV-OCn**. The **rr** column identifies the **RTRV-rr** command.

Table 3-156. RTRV-OCn Output Parameters (cont 1 of 8)

rr	Parameter Name	Description
EC1	<i>aid</i>	Access Identifier (starting in Release 2) Values: ■ electrical port AID.
OC3	<i>aid</i>	See OC48 (starting in Release 1.2)
OC12	<i>aid</i>	See OC48 (starting in Release 1.1)
OC48	<i>aid</i>	Access Identifier. Values: ■ Port AID of a SONET port.
OC192	<i>aid</i>	See OC48 (starting in Release 2).
OC3	<i>spec_block</i>	<i>crstat</i> See OC48 (starting in Release 1.3).
OC12		<i>crstat</i> See OC48 (starting in Release 1.3).
OC48		<i>crstat</i> Constituent Rates Status List (starting in Release 1.3). This parameter shows the rate of the port's signals. Values: see <i>inputsig</i>
OC192		<i>crstat</i> See OC48 (starting in Release 2).
OC3		<i>dccstat</i> See OC48 (starting in Release 1.2).
OC12		<i>dccstat</i> See OC48 (starting in Release 1.1).
OC48		<i>dccstat</i> Section DCC Status. This identifies the Section DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 3.0, <i>dccstat</i> is obsolete.
OC192		<i>dccstat</i> See OC48 (starting in Release 2.0).

Table 3-156. RTRV-OCn Output Parameters (cont 2 of 8)

rr	Parameter Name	Description
EC1	<i>eif</i>	Electrical Interface Type (starting in Release 2). This shows what type of input the port has been provisioned to receive. Values: ■ DS3 (initial value) ■ EC1.
EC1	<i>emi</i>	See OC48 (starting in Release 2).
OC3	<i>emi</i>	See OC48 (starting in Release 1.2).
OC12	<i>emi</i>	See OC48 (starting in Release 1.1).
OC48	<i>emi</i>	EBER ignored for AIS insertion. This parameter controls the contribution of EBER to AIS insertion. If <i>emi</i> 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	<i>emi</i>	See OC48 (starting in Release 2).
OC192	<i>fec</i>	FEC Mode Enable (starting in Release 2). Values: ■ ENABLE (initial value) ■ DISABLE.
OC192	<i>feccor</i>	FEC Correction Enable Values: ■ ENABLE (initial value) ■ DISABLE.
OC192	<i>fectype</i>	FEC Type (starting in Release 3) Values: ■ INBAND (initial value) ■ OUTBAND.
EC1	<i>felpm</i>	See OC48 (starting in Release 2).
OC3	<i>felpm</i>	See OC48 (starting in Release 1.3).

Table 3-156. RTRV-OCn Output Parameters (cont 3 of 8)

rr	Parameter Name	Description
OC12		<i>felpm</i> See OC48 (starting in Release 1.3).
OC48		<i>felpm</i> Far End Line PM Enable (starting in Release 1.3). It indicates if the performance monitoring feature is enabled or disabled. Values: ■ ENABLE ■ DISABLE (initial value).
OC192		<i>felpm</i> See OC48 (starting in Release 2).
OC3		<i>inputsig</i> See OC48 (starting in Release 1.2).
OC12		<i>inputsig</i> See OC48 (starting in Release 1.2).
OC48		<i>inputsig</i> 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 STS1's, 1 STS3C, 1 STS12C, 24 STS1's. If <i>trbmd</i> is FIXED, then <i>inputsig</i> constrains the cross connection rates that can be entered for the port. If <i>trbmd</i> is ADAPTIVE, then input <i>inputsig</i> has no effect. Starting in Release 2.0, X may have the value 48 which represents STS48C
OC192		<i>inputsig</i> See OC48 (starting in Release 2).
OC3		<i>istd</i> See OC48 (starting in Release 1.2).
OC12		<i>istd</i> See OC48 (starting in Release 1.2).
OC48		<i>istd</i> Interface Standard (starting in Release 1.2). The initial value is set with the <i>istddflt</i> parameter in the ED-EQPT command. Values: ■ SONET ■ SDH.

Table 3-156. RTRV-OCn Output Parameters (cont 4 of 8)

rr	Parameter Name	Description
OC192		<i>istd</i> See OC48 (starting in Release 2).
OC3		<i>ldccstat</i> See OC48 (starting in Release 1.3).
OC12		<i>ldccstat</i> See OC48 (starting in Release 1.3).
OC48		<i>ldccstat</i> Line DCC Status (starting in Release 1.3). This identifies the Line DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 3.0, <i>ldccstat</i> is obsolete.
OC192		<i>ldccstat</i> See OC48 (starting in Release 2.0).
OC3		<i>opdis</i> See OC48 (starting in Release 1.2).
OC12		<i>opdis</i> See OC48 (starting in Release 1.1).
OC48		<i>opdis</i> 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. Starting in Release 3.0, the above values will be replaced by numerical values whose units are in km.
OC192		<i>opdis</i> See OC48 (starting in Release 2).
OC3		<i>opwl</i> See OC48 (starting in Release 1.2).
OC12		<i>opwl</i> See OC48 (starting in Release 1.1).
OC48		<i>opwl</i> Optical Wavelength in nanometers. It shows the type of optics that is used on this port.
OC192		<i>opwl</i> See OC48 (starting in Release 2).

Table 3-156. RTRV-OCn Output Parameters (cont 5 of 8)

rr	Parameter Name	Description
OC48		<i>phypm</i> Physical PM Enable (starting in Release 1.3). This parameter indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE (initial value) ■ DISABLE.
OC192		<i>phypm</i> See OC48 (starting in Release 2).
OC48		<i>phytca</i> Physical TCA (starting in Release 2). 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).
OC192		<i>phytca</i> See OC48.
EC1		<i>pmode</i> See OC48 (starting in Release 2).
OC3		<i>pmode</i> See OC48 (starting in Release 1.2).
OC12		<i>pmode</i> See OC48 (starting in Release 1.1).
OC48		<i>pmode</i> 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		<i>pmode</i> See OC48 (starting in Release 2).
EC1		<i>ptype</i> See OC48 (starting in Release 2).
OC3		<i>ptype</i> See OC48 (starting in Release 1.2).
OC12		<i>ptype</i> See OC48 (starting in Release 1.1).
OC48		<i>ptype</i> Port Type. This identifies the port type of the AID. Values: see the valid values of "rr" for RTRV-rr.

Table 3-156. RTRV-OCn Output Parameters (cont 6 of 8)

rr	Parameter Name	Description
OC192		<i>ptype</i> See OC48 (starting in Release 2).
EC1		<i>sdthr</i> See OC48 (starting in Release 2).
OC3		<i>sdthr</i> See OC48 (starting in Release 1.2).
OC12		<i>sdthr</i> See OC48 (starting in Release 1.1).
OC48		<i>sdthr</i> 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.
OC192		<i>sdthr</i> See OC48 (starting in Release 2).
EC1		<i>sfthr</i> See OC48 (starting in Release 2).
OC3		<i>sfthr</i> See OC48 (starting in Release 1.2).
OC12		<i>sfthr</i> See OC48 (starting in Release 1.1).
OC48		<i>sfthr</i> Signal Failure Threshold. This shows the excessive BER threshold for the optical signal. Values (as exponents of 10): ■ -3 (initial value10⁻³) ■ -4 ■ -5.
OC192		<i>sfthr</i> See OC48 (starting in Release 2).
EC1		<i>sltca</i> See OC48 (starting in Release 2).
OC3		<i>sltca</i> See OC48 (starting in Release 2).
OC12		<i>sltca</i> See OC48 (starting in Release 2).

Table 3-156. RTRV - OCn Output Parameters (cont 7 of 8)

rr	Parameter Name	Description
OC48		<i>sltca</i> 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).
OC192		<i>sltca</i> See OC48 (starting in Release 2).
EC1		<i>snelpm</i> See OC48 (starting in Release 2).
OC3		<i>snelpm</i> See OC48 (starting in Release 1.3).
OC12		<i>snelpm</i> See OC48 (starting in Release 1.3).
OC48		<i>snelpm</i> Section and Near End Line PM Enable (starting in Release 1.3). It indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE (initial value) ■ DISABLE.
OC192		<i>snelpm</i> See OC48 (starting in Release 2).
EC1		<i>sonet</i> See OC48 (starting in Release 2).
OC3		<i>sonet</i> See OC48 (starting in Release 1.3).
OC12		<i>sonet</i> See OC48 (starting in Release 1.3).
OC48		<i>sonet</i> SONET Alarm Severity Assignment Profile (starting in Release 1.3). 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		<i>sonet</i> See OC48 (starting in Release 2). ■ NA - not available.
OC3		<i>trbmd</i> See OC48 (starting in Release 1.2).
OC12		<i>trbmd</i> See OC48 (starting in Release 1.2).

Table 3-156. RTRV-OCn Output Parameters (cont 8 of 8)

rr	Parameter Name	Description
OC48		<i>trbmd</i> Tributary mode (starting in Release 1.2). The initial value is set with the <i>trbmddflt</i> parameter in the ED-EQPT command. Values: ■ ADAPTIVE (future) ■ FIXED If <i>trbmd</i> is FIXED, then <i>inputsig</i> constrains the cross connection rates that can be entered for the port. If <i>trbmd</i> is ADAPTIVE, then input <i>inputsig</i> has no effect.
OC192		<i>trbmd</i> See OC48 (starting in Release 2).
OC3		<i>unequiposig</i> See OC48 (starting in Release 1.2).
OC12		<i>unequiposig</i> See OC48 (starting in Release 1.2).).
OC48		<i>unequiposig</i> Tributary Unequipped Output Signal Rate List (starting in Release 1.2). 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 <i>inputsig</i>.
OC192		<i>unequiposig</i> See OC48 (starting in Release 2).

The table that follows describes the output parameters for **ED - STMn**

Table 3-157. RTRV - STMn Output Parameters (cont 1 of 10)

rr	Parameter Name	Description
STM1	aid	Access Identifier (starting in Release 1.2). Values: ■ SDH optical port AID. ■ An AID range using the ALL keyword is also allowed, but only within one shelf. (See the AID table in OSEG Appendix A.)
STM1E	aid	See STM1 (starting in Release 3.1).
STM4	aid	See STM1 (starting in Release 1.3).
STM16	aid	See STM1 (starting in Release 1.2).
STM64	aid	See STM1 (starting in Release 2).
STM1	<i>spec_block</i>	<i>dccstat</i> Regeneration section DCC Status (starting in Release 1.2). This identifies the regeneration section DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 3.0, <i>dccstat</i> is obsolete.
STM4		<i>dccstat</i> See STM1 (starting in Release 1.3).
STM16		<i>dccstat</i> See STM1 (starting in Release 1.2).
STM64		<i>dccstat</i> See STM1 (starting in Release 2.0).
STM1		<i>degthr</i> Signal Degrade Threshold (starting in Release 3). This is less severe than <i>dexcthr</i>, the excessive degrade threshold. Values (as exponents of 10): ■ -5 ■ -6 (initial value10⁻⁶) ■ -7 ■ -8 ■ -9.

Table 3-157. RTRV -STMn Output Parameters (cont 2 of 10)

rr	Parameter Name	Description
STM1E		<i>degthr</i> See STM1 (starting in Release3.1).
STM4		<i>degthr</i> See STM1 (starting in Release 3).
STM16		<i>degthr</i> See STM1 (starting in Release 3).
STM64		<i>degthr</i> See STM1 (starting in Release 3).
STM1	<i>dexcth</i>	Excessive Degrade Threshold (starting in Release 3). This is more severe than <i>degthr</i> , the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value10⁻³) ■ -4 ■ -5.
STM1E	<i>dexcth</i>	See STM1 (starting in Release 3.1).
STM4	<i>dexcth</i>	See STM1 (starting in Release 3).
STM16	<i>dexcth</i>	See STM1 (starting in Release 3).
STM64	<i>dexcth</i>	See STM1 (starting in Release 3).
STM1	<i>emi</i>	EBER ignored for AIS insertion. This parameter controls the contribution of EBER to AIS insertion. If <i>emi</i> has a value of TRUE, then EBER will be ignored in the AIS insertion algorithm. That is, TRUE corresponds to disabling the consideration of EBER. Values: ■ TRUE (initial value) ■ FALSE.
STM1E	<i>emi</i>	See STM1 (starting in Release 3.1).
STM4	<i>emi</i>	See STM1 (starting in Release 1.3).
STM16	<i>emi</i>	See STM1 (starting in Release 1.2).
STM64	<i>emi</i>	See STM1 (starting in Release 2).
STM64	<i>fec</i>	FEC Enable (starting in Release 2). Values: ■ ENABLE (initial value) ■ DISABLE.

Table 3-157. RTRV -STMn Output Parameters (cont 3 of 10)

rr	Parameter Name	Description
STM64		<i>feccor</i> FEC Correction Enable (starting in Release 2). Values: ■ ENABLE (initial value) ■ DISABLE.
STM64		<i>fectype</i> FEC Type (starting in Release 3) Values: ■ INBAND (initial value) ■ OUTBAND.
STM1		<i>femspm</i> Far-end Multiplex Section PM Enable (starting in Release 1.3). Values: ■ ENABLE ■ DISABLE (initial value).
STM1E		<i>femspm</i> See STM1 (starting in Release 3.1).
STM4		<i>femspm</i> See STM1 (starting in Release 1.3).
STM16		<i>femspm</i> See STM1 (starting in Release 1.3).
STM64		<i>femspm</i> See STM1 (starting in Release 2).
STM1		<i>inputsig</i> Tributary Input Signal Rate List. This parameter is a list of VCn rates across the port's bandwidth. This parameter is not reported if the port is in adaptive mode. Values: NX-NX-NX... where N is the number of Xs. X can be 3, 4, or 4C representing VC3, VC4 or VC4-4C. Example: an STM-16 signal might be represented by 93-14-14C-243 which implies 9 VC3s, 1 VC4, 1 VC4-4C, 24 VC3s. The representation is not unique, for example it could also be 33-63-14-14C-243. If <i>trbmd</i> is FIXED, then <i>inputsig</i> constrains the cross connection rates that can be entered for the port. If <i>trbmd</i> is ADAPTIVE, then input <i>inputsig</i> has no effect. Starting in Release 3, X may have the value 16C which represents VC-4-16C
STM1E		<i>inputsig</i> See STM1 (starting in Release 3.1).
STM4		<i>inputsig</i> See STM1 (starting in Release 1.3).

Table 3-157. RTRV -STMn Output Parameters (cont 4 of 10)

rr	Parameter Name	Description
STM16		<i>inputsig</i> See STM1 (starting in Release 1.2).
STM64		<i>inputsig</i> See STM1 (starting in Release 2).
STM1		<i>istd</i> This parameter is available starting in Release 1.2. Interface Standard. The initial value is set with the <i>istddflt</i> parameter in the ED-EQPT command. Values: ■ SONET ■ SDH
STM4		<i>istd</i> See STM1 (starting in Release 1.3).
STM16		<i>istd</i> See STM1 (starting in Release 1.2).
STM64		<i>istd</i> See STM1 (starting in Release 2).
STM1		<i>ldccstat</i> Line DCC Status (starting in Release 1.3). This identifies the multiplex section DCC channel status for the specified port. Values: ■ ENABLE ■ DISABLE. Starting in Release 3.0, <i>ldccstat</i> is obsolete.
STM4		<i>ldccstat</i> See STM1 (starting in Release 1.3).
STM16		<i>ldccstat</i> See STM1 (starting in Release 1.2).
STM64		<i>ldccstat</i> See STM1 (starting in Release 2.0).
STM1		<i>msdeg</i> Multiplex Section DEG Threshold (starting in Release 1.2). Values (as exponents of 10): ■ -4 ■ -5 ■ -6 (initial value10⁻⁶) ■ -7 ■ -8 ■ -9. The parameter <i>msdeg</i> is replaced in Release 3 by <i>degthr</i>.

Table 3-157. RTRV -STMn Output Parameters (cont 5 of 10)

rr	Parameter Name	Description
STM4	<i>msdeg</i>	See STM1 (starting in Release 1.2).
STM16	<i>msdeg</i>	See STM1 (starting in Release 1.2).
STM64	<i>msdeg</i>	See STM1 (starting in Release 2.0).
STM1	<i>msdexc</i>	Multiplex Section DEXC Threshold (starting in Release 1.2) Values: (as exponents of 10) ■ -3 (initial value10⁻³) ■ -4 ■ -5. The parameter <i>msdexc</i> is replaced in Release 3 by <i>dexcthr</i>.
STM4	<i>msdexc</i>	See STM1 (starting in Release 1.3).
STM16	<i>msdexc</i>	See STM1 (starting in Release 1.2).
STM64	<i>msdexc</i>	See STM1 (starting in Release 2.0).
STM1	<i>opdis</i>	Optical Distance (starting in Release 1.2). It shows the type of application for which the optical transmitter on this port is suited. Values: ■ INTRA-OFFICE ■ SHORT-HAUL ■ LONG-HAUL ■ OLS_400G ■ OLS_PASSIVE ■ OLS_80G
STM4	<i>opdis</i>	See STM1 (starting in Release 1.3).
STM16	<i>opdis</i>	See STM1 (starting in Release 1.2).
STM64	<i>opdis</i>	See STM1 (starting in Release 2).
STM1	<i>opwl</i>	Optical Wavelength (starting in Release 1.2) in nanometers. It shows the type of optics that is used on this port.
STM4	<i>opwl</i>	See STM1 (starting in Release 1.3).
STM16	<i>opwl</i>	See STM1 (starting in Release 1.2).

Table 3-157. RTRV -STMn Output Parameters (cont 6 of 10)

rr	Parameter Name	Description
STM64		<i>opwl</i> See STM1 (starting in Release 2).
STM16		<i>phypm</i> See STM64 (starting in Release 3).
STM64	<i>phypm</i>	Physical PM Enable (starting in Release 3). This parameter indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE (initial value) ■ DISABLE.
STM16	<i>phytca</i>	See STM64 (starting in Release 3).
STM64	<i>phytca</i>	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).
STM1	<i>pmmsfes</i>	Performance Monitoring Multiplex Section Far-end SES Threshold (starting in Release 2). Values (as a percentage): 0 - 100 at increments of 5. Initial value: 15 The values are a percentage of the maximum number of bit errors. As an example, for STM-1 there can be a maximum number of 24 bit errors per frame. Using this number, and the fact there are 8000 frames per second, implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E	<i>pmmsfes</i>	See STM1 (starting in Release 3.1).
STM4	<i>pmmsfes</i>	See STM1 (starting in Release 2).
STM16	<i>pmmsfes</i>	See STM1 (starting in Release 2).
STM64	<i>pmmsfes</i>	See STM1 (starting in Release 2).

Table 3-157. RTRV -STMn Output Parameters (cont 7 of 10)

rr	Parameter Name	Description
STM1		<i>pmmsneses</i> Performance Monitoring Multiplex Section Near-end SES Threshold (starting in Release 2). Values (as a percentage): 0 - 100 at increments of 5 Initial value: 15 The values are a percentage of the maximum number of bit errors. As an example, for STM-1 there can be a maximum number of 24 bit errors per frame. Using this number, and the fact there are 8000 frames per second, implies a threshold of 30 percent is equivalent to 57600 bit errors per second.
STM1E		<i>pmmsneses</i> See STM1 (starting in Release 3.1).
STM4		<i>pmmsneses</i> See STM1 (starting in Release 2).
STM16		<i>pmmsneses</i> See STM1 (starting in Release 2).
STM64		<i>pmmsneses</i> See STM1 (starting in Release 2).
STM1		<i>pmode</i> This parameter sets the mode of the port (starting in Release 1.2). Values: ■ AUTO (initial value) indicates that, when a signal is detected at the port, then alarm monitoring will start. ■ MON indicates that alarm monitoring is taking place on the port. ■ NMON means that alarm monitoring is not occurring on the port.
STM1E		<i>pmode</i> See STM1 (starting in Release 3.1).
STM4		<i>pmode</i> See STM1 (starting in Release 1.3).
STM16		<i>pmode</i> See STM1 (starting in Release 1.2).
STM64		<i>pmode</i> See STM1 (starting in Release 2).

Table 3-157. RTRV -STMn Output Parameters (cont 8 of 10)

rr	Parameter Name	Description
STM1		<i>pmrsneses</i> Performance Monitoring Regenerator Section Near-end SES threshold (starting in Release 2). Values (as a percentage): 0 - 100 at increments of 5 Initial value: 30 The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec, thus the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
STM1E		<i>pmrsneses</i> See STM1 (starting in Release 3.1).
STM4		<i>pmrsneses</i> See STM1 (starting in Release 2).
STM16		<i>pmrsneses</i> See STM1 (starting in Release 2).
STM64		<i>pmrsneses</i> See STM1 (starting in Release 2).
STM1		<i>ptype</i> Port Type (starting in Release 1.2). This identifies the port type of the AID. Values: ■ STM1 ■ STM1E ■ STM4 ■ STM16 ■ STM64
STM1E		<i>ptype</i> See STM1 (starting in Release 3.1).
STM4		<i>ptype</i> See STM1 (starting in Release 1.3).
STM16		<i>ptype</i> See STM1 (starting in Release 1.2).
STM64		<i>ptype</i> See STM (starting in Release 2).
STM1		<i>rsmstca</i> RS/MS TCA Profile Pointer (starting in Release 2). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value).
STM1E		<i>rsmstca</i> See STM1 (starting in Release 3.1).

Table 3-157. RTRV -STMn Output Parameters (cont 9 of 10)

rr	Parameter Name	Description
STM4		<i>rsmstca</i> See STM1 (starting in Release 2).
STM16		<i>rsmstca</i> See STM1 (starting in Release 2).
STM64		<i>rsmstca</i> See STM1 (starting in Release 2).
STM1		<i>rsnemspm</i> Regenerator Section/Near-end Multiplex Section PM (starting in Release 1.3). Values: ■ ENABLE (initial value) ■ DISABLE.
STM1E		<i>rsnemspm</i> See STM1 (starting in Release 3.1).
STM4		<i>rsnemspm</i> See STM1 (starting in Release 1.3).
STM16		<i>rsnemspm</i> See STM1 (starting in Release 1.3).
STM64		<i>rsnemspm</i> See STM1 (starting in Release 2).
STM1		<i>sdhpn</i> SDH Alarm Severity Assignment Profile (starting in Release 1.2). This parameter retrieves the SDH ASAP profile name to which the designated AID points. Value: ■ Alphanumeric string with a maximum of 24 characters. The initial profile is named "Default".
STM1E		<i>sdhpn</i> See STM1 (starting in Release 3.1).
STM4		<i>sdhpn</i> See STM1 (starting in Release 1.3).
STM16		<i>sdhpn</i> See STM1 (starting in Release 1.2).
STM64		<i>sdhpn</i> See STM1 (starting in Release 2).
STM1		<i>trbmd</i> Tributary mode (starting in Release 1.2). The initial value is set with the <i>trbmddflt</i> parameter in the ED-EQPT command. Values: ■ ADAPTIVE (future) ■ FIXED. If <i>trbmd</i> is FIXED, then <i>inputsig</i> constrains the cross connection rates that can be entered for the port. If <i>trbmd</i> is ADAPTIVE, then input <i>inputsig</i> has no effect.

Table 3-157. RTRV -STMn Output Parameters (cont 10 of 10)

rr	Parameter Name	Description
STM4		<i>trbmd</i> See STM1 (starting in Release 1.3).
STM16		<i>trbmd</i> See STM1 (starting in Release 1.2).
STM64		<i>trbmd</i> See STM1 (starting in Release 2).
STM1		<i>unequiposig</i> Tributary Unequipped Output Signal Rate List (starting in Release 1.2). This parameter is a list of VCn rates across the port's bandwidth. It determines the rate(s) of the "unequipped" signal that will be transmitted if there is no cross connection. This parameter is not reported if the port is in adaptive mode. Values: see <i>inputsig</i>
STM1E		<i>unequiposig</i> See STM1 (starting in Release 3.1).
STM4		<i>unequiposig</i> See STM1 (starting in Release 1.3).
STM16		<i>unequiposig</i> See STM1 (starting in Release 1.2).
STM64		<i>unequiposig</i> See STM1 (starting in Release 2).

The table that follows describes the output parameters for **RTRV -STS1**. The **RTRV -STS1** command is also applicable to STS3c other concatenated tributaries.

The table that follows describes the output parameters for **RTRV -VC3**. The **RTRV -VC3** command is also applicable to VC4 tributaries. Even though a VC4 signal is not a concatenated VC3 signal in a strict sense, from a pointer processor viewpoint it can be considered to be comprised of three VC3 signals which have the properties of a concatenated signal. Thus it is not necessary to have a separate RTRV command for VC4. Similarly, **RTRV -VC3** is also applicable to VC4-4C and other "concatenated" tributaries.

The **rr** column identifies the **RTRV -rr** command.

Even if the command is used for a concatenated signal, it can be applied to any of the tributaries (for example, to the second tributary of the concatenated signal). However, only the parameters pertaining to the first tributary of a concatenated signal are used by the software to determine system operation. If the signal were

changed from a concatenated signal to non concatenated, then the parameters for each of the tributaries would be used by the software.

Table 3-158. Tributary Output Parameters (cont 1 of 7)

rr	Parameter Name	Description
STS1	<i>aid</i>	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.
VC3	<i>aid</i>	Access Identifier (starting in Release 1.2) Values: ■ Tributary AID of an SDH tributary. ■ An AID range using the ALL keyword is also allowed, but only within one shelf. See the AID table in OSEG Appendix A.
VC3	<i>spec_block</i>	<i>brstintvl</i> Bursty Interval (starting in Release 3.1). Measurement period for determining bursty errors. See <i>brstthr</i> . Values: ■ 2 to 10 (seconds) Initial value: 7
VC3		<i>brstthr</i> Bursty error Threshold (starting in a Release 3.1). Theshold value for bursty errors. Values (as a percentage): 0 - 100 at increments of 5 Initial value: 30
STS1		<i>crslpbkrate</i> Crossconnect loopback rate (starting in Release 1.3). Values: ■ STS1 ■ STS3C ■ STS12C ■ STS48C ■ NA

Table 3-158. Tributary Output Parameters (cont 2 of 7)

rr	Parameter Name	Description
STS1		<i>crslpbkstat</i> Crossconnect loopback status (starting in Release 1.3). Values: ■ YES ■ NO.
VC3		<i>crslpbkstat</i> Crossconnect loopback status (starting in Release 1.3) Values: ■ YES ■ NO.
STS1	<i>degthr</i>	Path BER threshold (starting in Release 3). Values: (as exponents of 10) ■ -5 ■ -6 (initial value 10⁻⁶) ■ -7 ■ -8 ■ -9.
VC3	<i>degthr</i>	Path BER threshold (starting in Release 3). Values: (as exponents of 10) ■ -5 ■ -6 (initial value 10⁻⁶) ■ -7 ■ -8 ■ -9.
STS1	<i>dexcth</i>	Excessive Degrade Threshold (starting in Release 3). This is more severe than <i>degthr</i> , the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value 10⁻³) ■ -4 ■ -5.

Table 3-158. Tributary Output Parameters (cont 3 of 7)

rr	Parameter Name	Description
VC3		<i>dexcthr</i> Excessive Degrade Threshold (starting in Release 3) This is more severe than <i>degthr</i>, the degrade threshold. Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5.
VC3		<i>msdeg</i> Multiplex Section DEG Threshold (starting in Release 2) Values: (as exponents of 10) ■ -5 ■ -6 (initial value 10^{-6}) ■ -7 ■ -8 ■ -9. The parameter <i>msdeg</i> is replaced in Release 3 by <i>degthr</i>.
STS1		<i>msdexc</i> Multiplex Section DEXC Threshold (starting in Release 1.2). Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5. The parameter <i>msdexc</i> is replaced in Release 3 by <i>dexcthr</i>.
VC3		<i>msdexc</i> Multiplex Section DEXC Threshold (starting in Release 1.2). Values: (as exponents of 10) ■ -3 (initial value10^{-3}) ■ -4 ■ -5. The parameter <i>msdexc</i> is replaced in Release 3 by <i>dexcthr</i>.

Table 3-158. Tributary Output Parameters (cont 4 of 7)

rr	Parameter Name	Description
VC3		<i>pmhpfeses</i> Higher-order Path Far-end SES Threshold (starting in Release 2). Values: see <i>pmhpneses</i> .
VC3		<i>pmhpneses</i> Higher-order Path Near-end SES Threshold (starting in Release 2). Values (as a percentage): 0 - 50 at increments of 5 Initial value: 30 The values are a percentage of the maximum number of errored frames. There are a 8000 frames/sec, thus the range of errors is 1 to 8000. A default of 30% is equivalent to 2400 errored frames.
STS1	<i>ppm</i>	Path PM Enable (starting in Release 1.3). 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).
VC3	<i>ppm</i>	Path PM Enable (starting in Release 1.3). It indicates if this performance monitoring feature is enabled or disabled. It applies to both near end and far end PM. Values: ■ ENABLE ■ DISABLE (initial value).
STS1	<i>pse</i>	PDI-P Switching Enable (starting in Release 3.1). This parameter is applicable to the following prototypes: Values: ■ ENABLE (initial value) ■ DISABLE.
STS1	<i>pse</i>	PDI-P Switching Enable (starting in Release 3.1). This parameter is applicable to the following prototypes: Values: ■ ENABLE (initial value) ■ DISABLE.

Table 3-158. Tributary Output Parameters (cont 5 of 7)

rr	Parameter Name	Description
STS1		<i>ptca</i> Path TCA Profile Pointer (starting in Release 2). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value).
VC3		<i>ptca</i> Path TCA Profile Pointer (starting in Release 2). Values: Alphanumeric string with a maximum of 24 characters. The initial profile is named "Default0".
STS1		<i>ptrc</i> Path Trace. This parameter shows the value of the Path Trace Identifier on the incoming path overhead J1 byte of a non-terminated tributary. The value is: ■ 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 <i>ptrcrfmt</i> parameter. The length of the transmitted path trace, may be different from the displayed length. If the received trace is smaller than indicated by <i>ptrcrfmt</i>, 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.
VC3		<i>ptrc</i> Path Trace. This parameter shows the value of the Path Trace Identifier on the incoming path overhead J1 byte of a non-terminated tributary. The value is: ■ Hexadecimal digits (each byte is expressed as two hexadecimal digits. An example of a byte is 6D). ■ NA - not available

Table 3-158. Tributary Output Parameters (cont 6 of 7)

rr	Parameter Name	Description
STS1	<i>ptrcrfmt</i>	The length displayed is set with the <i>ptrcrfmt</i> parameter. The length of the transmitted path trace, may be different from the displayed length. If the received trace is smaller than indicated by <i>ptrcrfmt</i>, 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. Starting in Release 1.2, the read format of J1, the incoming path trace (<i>ptrc</i>). 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.
VC3	<i>ptrcrfmt</i>	Starting in Release 1.2, the read format of J1, the incoming path trace (<i>ptrc</i>). 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.
STS1	<i>tastat</i>	Test Access Status (starting in Release 2). Values: ■ YES ■ NO (initial value).

Table 3-158. Tributary Output Parameters (cont 7 of 7)

rr	Parameter Name	Description
VC3		<i>tastat</i> See STS1 (starting in Release 2).
STS1		<i>tmonmd</i> Tributary Monitoring Mode (starting in Release 1). 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.
VC3		<i>tmonmd</i> Tributary Monitoring Mode (starting in Release 1.2). This parameter indicates the mode of the tributary. Values: ■ MON indicates that alarm monitoring is taking place on the port. ■ NMON (initial value) means that alarm monitoring is not occurring on the port (initial value).
VC3		<i>tribsdhpn</i> Tributary Alarm Severity Assignment Profile (starting in Release 1.2). 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".
STS1		<i>tribsonetpn</i> This parameter is available starting in Release 1.2. Tributary Alarm Severity Assignment Profile (ASAP). 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**.

Table 3-159. RTRV - T3 Output Parameters (cont 1 of 8)

<i>rr</i>	Parameter Name	Description
T3	<i>aid</i>	Access Identifier. Values: ■ electrical port AID.
T3	<i>spec_block</i>	<i>cbitmis</i> DS3 C-bit Signal Format Mismatch (starting in Release 2.1). 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		<i>crslpbkstat</i> Crossconnect loopback status (starting in Release 1.3) Values: ■ YES ■ NO.
T3		<i>ds3in</i> 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 3-159. RTRV - T3 Output Parameters (cont 2 of 8)

<i>rr</i>	Parameter Name	Description
T3	<i>ds3out</i>	DS3 Output Port Alarm Severity Assignment Profile (starting in Release 1.2). 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	<i>elf</i>	Electrical Interface Type (starting in Release 2). This shows what type of input the port has been provisioned to receive. Values: ■ DS3 (initial value) ■ EC1. ■ NA - not available[
T3	<i>fmt</i>	DS3 Signal Format. This shows the format for the DS3 signal. Values: ■ C-BIT: 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. This is the initial value. ■ 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.

Table 3-159. RTRV - T3 Output Parameters (cont 3 of 8)

<i>rr</i>	Parameter Name	Description
T3	<i>inpm</i>	DS3 Incoming PM Enable (starting in Release 1.3). This enables/disables the incoming DS3 parameters performance monitoring. Values: ■ ENABLE ■ DISABLE (initial value).
T3	<i>itca</i>	Incoming DS3 PM TCA (starting in Release 1.3). 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).
T3	<i>otca</i>	Outgoing DS3 PM TCA (starting in Release 1.3). 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).
T3	<i>outpm</i>	DS3 Outgoing PM Enable (starting in Release 1.3). This parameter indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE ■ DISABLE (initial value).
T3	<i>pdir</i>	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.

Table 3-159. RTRV - T3 Output Parameters (cont 4 of 8)

<i>rr</i>	Parameter Name	Description
T3		<i>pmode</i> 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.
T3		<i>pmptfhpfses</i> PTF Higher-order Path Far-end SES Threshold (starting in Release 2). This parameter only applies when <i>ptfstd</i> has value SDH. Values: see <i>pmptfhpneses</i>.
T3		<i>pmptfhpneses</i> PTF Higher-order Path Near-end SES Threshold (starting in Release 2). This parameter only applies when <i>ptfstd</i> has value SDH. Values: ■ 1 - 8000 (2400 initial value)
T3		<i>pmsesl</i> PM threshold (errors in a second) for declaring SES - line (starting in Release 1.3). Values: ■ 44 (initial value) ■ 2444.
T3		<i>pmsesp</i> PM threshold (errors in a second) for declaring SES - path (starting in Release 1.3). Values: ■ 44 (initial value) ■ 2444.
T3		<i>pmsespfe</i> PM threshold (errors in a second) for declaring far end SES - path (starting in Release 1.3). Values: ■ 44 (initial value) ■ 2444.

Table 3-159. RTRV - T3 Output Parameters (cont 5 of 8)

<i>rr</i>	Parameter Name	Description
T3	<i>ptffmcrs</i>	PTF FM Crossconnect Dependency (starting in Release 1.2). Values: ■ YES (initial value if <i>ptfstd</i> is SONET) ■ NO (initial value if <i>ptfstd</i> is SDH).
T3	<i>ptfpm</i>	PTF PM Enable (starting in Release 2). It indicates if this performance monitoring feature is enabled or disabled. Values: ■ ENABLE ■ DISABLE (initial value).
T3	<i>ptfstd</i>	PTF Standard (starting in Release 1.2). Values: ■ SONET ■ SDH ■ The value of <i>istddflt</i> in ED-EQPT command (initial value).
T3	<i>ptftca</i>	PTF TCA Profile Pointer (starting in Release 2). Values: ■ Alphanumeric string with a maximum of 24 characters ■ Default ■ Default0 (initial value).

Table 3-159. RTRV - T3 Output Parameters (cont 6 of 8)

<i>rr</i>	Parameter Name	Description
T3		<i>ptrcwfmt</i> Starting in Release 1.3, write format of J1, the outgoing path trace (<i>trc</i>). 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		<i>ptype</i> Port Type. This identifies the port type of the AID. Values: ■ T3
T3		<i>rsiglb</i> Received Signal Label (starting in Release 1.2). 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		<i>sdthr</i> 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.

Table 3-159. RTRV - T3 Output Parameters (cont 7 of 8)

<i>rr</i>	Parameter Name	Description
T3	<i>sigmis</i>	DS3/EC1 Signal Type Mismatch (starting in Release 2.1). 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	<i>tastat</i>	Test Access Status (starting in Release 2). Values: ■ YES ■ NO (initial value).
T3	<i>tmonmd</i>	Tributary monitoring mode (starting in Release 1.2). 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	<i>trc</i>	Outgoing Path Trace. This identifies the path trace message that was provisioned to be transmitted. Beginning with Release 1, 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 <i>ptrcwfmt</i> parameter. See <i>ptrcwfmt</i> for the initial value of <i>trc</i>.
T3	<i>tsiglb</i>	Transmitted Signal Label (starting in Release 1.2). This parameter shows the value of the transmitted C2 signal label for the terminated DS3 service. Values: ■ 2-digit hex.

Table 3-159. RTRV-T3 Output Parameters (cont 8 of 8)

<i>rr</i>	Parameter Name	Description
T3	<i>vmr</i>	■ 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. 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 98-01-01 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-RSVN: Retrieve Reservation

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): P1

COMMAND PRIORITY

1.

INPUT FORMAT

The syntax is:

RTRV-RSVN-*modifier*:*tid*:*aid*:*ctag*;

DESCRIPTION

The **RTRV-RSVN** command can be initiated by the user to retrieve the reservation information on tributaries and on their associated parameter attributes in the network element.

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

INPUT PARAMETERS

Table 3-160. RTRV-RSVN Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate of the tributary on which the retrieve reservation command is to act. Values: ■ ALL ■ STS1 ■ STS3

Table 3-160. RTRV - RSVN Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	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).
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

If the **RTRV - RSVN** request completes successfully, the following normal completion response is returned:

```

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

No data line(s) are produced if there is/are no reservation(s) 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 3-161. RTRV-RSVN Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. Value: ■ logical tributary AID.
<i>rate</i>	Specifies the signal rate of the reservation. Values: ■ STS1 ■ STS3 ■ STS12 (starting in Release 2) ■ STS48 (starting in Release 3) ■ VC3 ■ VC4 ■ VC44C (starting in Release 2) ■ VC416C (starting in Release 3)
<i>spec_block</i>	<i>node</i> Identifies the node at which service is added to or dropped from the BLSR. This parameter is omitted for non-BLSR connections. Value: See <i>tid</i> in the RTRV-HDR command. Starting in Release 3.0, the value becomes a text sting of up to 20 characters and 7-bit hex values of [20-7E] (i.e., printable (ASCII) characters).

Table 3-161. RTRV-RSVN Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>xcstat</i>	Cross-Connection Status. Indicates which portions of the reservation are used in existing cross-connections ('Y' for 'yes' and 'N' for 'no'). For a reservation on STS3 or STS12 rate, multiple <i>xcstat</i> values are shown, with each <i>xcstat</i> value representing an STS1 tributary within that reservation. Refer to example section of this command. STS3 and STS12 rates are not supported in Release 1.0.
	Values: ■ Y ■ N.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of a **RTRV-RSVN** command on the port specified in the *aid* field. This example retrieves existing three STS1 reservations on the port with an existing cross-connection on the first STS1. The reservation in this example is intended for non-BLSR connection:

```
RTRV-RSVN-ALL:LT-WBM-789:1-1-#-#-16-1-all:123456;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
"1-1-u-#-16-1-1:STS1:XCSTAT=Y"
"1-1-u-#-16-1-2:STS1:XCSTAT=N"
"1-1-u-#-16-1-3:STS1:XCSTAT=N"
;
```

The following example shows the successful completion of a **RTRV-RSVN** command on the port specified in the *aid* field. This example retrieves existing

three STS1 reservations on the port with an existing cross-connection on the first STS1. The reservation in this example is intended for BLSR connection:

```
RTRV-RSVN-ALL:LT-WBM-789:1-1-#-#-16-1-all:123456;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
"1-1-f01-ew-16-1-1:STS1:NODE=LT-WBM-567,XCSTAT=Y"
"1-1-f01-ew-16-1-2:STS1:NODE=LT-WBM-567,XCSTAT=N"
"1-1-f01-ew-16-1-3:STS1:NODE=LT-WBM-567,XCSTAT=N"
;
```

The following example shows the successful completion of a **RTRV-RSVN** command on the port specified in the **aid** field. This example retrieves existing three VC3 reservations on the port with an existing cross-connection on the first VC3. The reservation in this example is intended for non-BLSR connection:

```
RTRV-RSVN-ALL:LT-WBM-789:1-1-#-#-16-1-all:123456;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
"1-1-u-#-16-1-1:VC3:XCSTAT=Y"
"1-1-u-#-16-1-2:VC3:XCSTAT=N"
"1-1-u-#-16-1-3:VC3:XCSTAT=N"
;
```

The following example shows the successful completion of a **RTRV-RSVN** command on the port specified in the **aid** field. This example retrieves existing three VC3 reservations on the port with an existing cross-connection on the first VC3. The reservation in this example is intended for BLSR connection:

```
RTRV-RSVN-ALL:LT-WBM-789:1-1-#-#-16-1-all:123456;

LT-WBM-789 98-01-01 08:00:00
M 123456 COMPLD
"1-1-f01-ew-16-1-1:VC3:NODE=LT-WBM-567,XCSTAT=Y"
"1-1-f01-ew-16-1-2:VC3:NODE=LT-WBM-567,XCSTAT=N"
"1-1-f01-ew-16-1-3:VC3:NODE=LT-WBM-567,XCSTAT=N"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

DLT - RSVN

ED - RSVN

ENT - RSVN

NAME

RTRV-STATE-EQPT: Retrieve State Equipment

The **RTRV-STATE-EQPT** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1 and P2

Beginning with Release 3.0, 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 3-162. RTRV-STATE-EQPT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. Value: ■ System AID. ■ Shelf AID. The keyword "all" is allowed in the AID.

Table 3-162. RTRV-STATE-EQPT Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ Slot AID. The keyword "all" is allowed in the AID. ■ Circuit pack AID. The keyword "all" is allowed in the AID. ■ Controller complex AID
<i>ctag</i>	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 3-163. RTRV-STATE-EQPT Output Parameters (cont 1 of 5)

Parameter Name	Description
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A.

Table 3-163. RTRV-STATE-EQPT Output Parameters (cont 2 of 5)

Parameter Name	Description
<i>spec_block</i>	<i>mcond</i> Maintenance Condition. This parameter is available starting in Release 1. This parameter is reported for a system AID. Values: ■ Y ■ N. <i>rstmd</i> Restoration Mode. This parameter is available starting in Release 1.2. This parameter is reported for a system AID. Values: ■ Y ■ N. <i>swifutl</i> Intershelf Connection Bandwidth. This parameter is only for Release 1.0. This parameter is reported for a WaveStar BandWidth Manager I/O shelf AID. Values: 0-192. <i>utlto</i> This parameter available starting in Release 1.2. Used Intershelf Bandwidth Ingress (UIBI). 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. <i>utlfrom</i> This parameter available starting in Release 1.2. Used Intershelf Bandwidth Egress (UIBE). 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. <i>swiflst</i> Intershelf Bandwidth Unit Usage List. This parameter is available starting in Release 1. This parameter is reported for a WaveStar BandWidth Manager 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: Y/N Y/N Y/N Y/N (one entry for each SWIF pair); for example, YYYY, NNNN, YNYN, etc., where Y and N mean: ■ Y - Bandwidth is in use. ■ N - Bandwidth is unused, or the SWIF circuit pack is unequipped.

Table 3-163. RTRV-STATE-EQPT Output Parameters (cont 3 of 5)

Parameter Name	Description
	<i>holdst</i> Holder Status. This parameter is available starting in Release 1. This parameter is reported for a slot AID. Values: ■ EMPTY There is no circuit pack currently in the slot. This is the initial value. ■ VALID The slot contains a circuit pack with the latch closed and the circuit pack is contained in the slot's acceptable circuit pack list. ■ UNEXPECTED A circuit pack is in the slot with the latch closed, the circuit pack is in the slot's acceptable circuit pack list, but the slot is provisioned or pre-provisioned for another type of valid circuit pack. ■ ILLEGAL The slot contains a circuit pack with the latch closed, but the pack is not in the slot's acceptable circuit pack list. ■ UNKNOWN The slot contains a circuit pack with the latch open. <i>opstate</i> Operational State. This parameter is available starting in Release 1. Values: ■ ENABLE ■ DISABLE. This parameter is reported for a circuit pack AID. This parameter is reported for a controller complex AID. <i>procst</i> Procedural Status. This parameter is available starting in Release 1. This parameter is reported for all circuit packs. Values: ■ INITIALIZING The circuit pack is currently executing its start-up procedure. ■ NOT_INITIALIZED The circuit pack start-up procedure cannot complete. ■ If the circuit pack has completed its start-up procedure, this parameter will be omitted. This parameter is reported for a controller complex AID.

Table 3-163. RTRV-STATE-EQPT Output Parameters (cont 4 of 5)

Parameter Name	Description
	<i>flequp</i> Flashdisk Equipage. This parameter is available starting in Release 1. This parameter is reported for a memory circuit pack AID (including SYS50DM). Values: ■ EMPTY ■ VALID. <i>flaccp</i> Flashdisk Acceptability. This parameter is available starting in Release 1. This parameter is reported for a memory circuit pack AID (including SYS50DM). Values: ■ ENABLE ■ DISABLE. <i>avlst</i> Availability Status. This parameter is available starting in Release 1. This parameter is reported for a circuit pack AID. Values: ■ NOT_INSTALLED The circuit pack has a "circuit pack unequipped" alarm. ■ OFFLINE The circuit pack is out of service. ■ IN_TEST The circuit pack is under test. ■ FAILED The circuit pack has a circuit pack failure alarm. ■ If none of the values apply, the parameter will be omitted. <i>stbyst</i> Standby Status. This parameter is available starting in Release 1. Values: ■ PROVIDING_SERVICE ■ HOT_STANDBY. This parameter is reported for a controller circuit pack AID. This parameter is reported for a controller complex AID. <i>provst</i> Provisioned State. This parameter is available starting in Release 1. Values: ■ PREPROVISIONED ■ PROVISIONED.

Table 3-163. RTRV-STATE-EQPT Output Parameters (cont 5 of 5)

Parameter Name	Description
	This parameter is reported for an I/O shelf AID. This parameter is reported for a circuit pack AID.
	<i>sysavst</i> System Availability Status. This parameter is available starting in Release 3. 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 INPUT/OUTPUT

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

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

```
LT-WBM 98-01-01 08:00:00
M 123456 COMPLD
"system:mcond=y,rstmd=y"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

DLT-EQPT

ED-EQPT

ED-STATE-EQPT

ENT - EQPT

RTRV - EQPT

NAME

RTRV-SYCN: Retrieve Synchronization

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

COMMAND PRIORITY

- 1.

INPUT FORMAT

Starting in Release 1.0:

RTRV-SYCN: *tid::ctag*;

Starting in Release 2.0:

RTRV-SYCN: *tid::ctag::spec_block*;

DESCRIPTION

The **RTRV-SYCN** command displays the provisioning and operational information on the synchronization attributes as set by the **SET-SYCN** 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-SYCN** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-164. RTRV-SYNCN Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	For the following <i>spec_block</i> 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. 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. 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. tinpaid1 Starting with Release 2, this parameter is Timing Input Port AID. Values: ■ EXTTMG0. tinpaid2 Starting with Release 2, this parameter is Timing Input Port AID. Values: ■ EXTTMG1.

Table 3-164. RTRV-SYNCN Input Parameters (cont 2 of 2)

Parameter Name	Description
	<i>toutpaid1</i> Starting with Release 2, this parameter is Timing Output Port AID. Values: ■ EXTTMG0_OUT. <i>toutpaid2</i> Starting with Release 2, this parameter is Timing Output Port AID. Values: ■ 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 3-165. RTRV-SYNCN Output Parameters for Retrieving System Timing (cont 1 of 4)

Parameter Name	Description
<i>spec_block</i>	The following <i>spec_block</i> parameters are related to retrieve System Timing.

Table 3-165. RTRV-SYNCN Output Parameters for Retrieving System Timing (cont 2 of 4)

Parameter Name	Description
	<i>stratum_level</i> Stratum Level Status. This provides information about stratum level of the system clock. Value: ■ 3. Starting with Release 3.0, when System Synchronization Characteristic (Refer to the ED-EQPT command for this parameter) is SONET, then <i>stratum_level</i> can have the following value. Value: ■ 3. When System Synchronization Characteristic (Refer to the ED-EQPT command for this parameter) is SDH, then <i>stratum_level</i> can have an additional value. Value: ■ SEC. <i>fs_stat</i> 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: ■ NORMAL. <i>wu_stat</i> Warm Up Status. This is an attribute of the timing pack hardware design. Values: ■ WARMING-UP ■ NORMAL. <i>syssig_stat</i> 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. <i>active_ref</i> Active System Timing Reference State. This shows the active timing reference the system clock is currently using for locked mode of timing. Values: ■ EXTREF1 ■ EXTREF2.

Table 3-165. RTRV -SYNCN Output Parameters for Retrieving System Timing (cont 3 of 4)

Parameter Name	Description
	Starting with Release 1.2, this parameter can also have an additional value. Value: ■ LINE1. <i>refsw_stat</i> This shows the system timing reference switch request state. Values: ■ MANUAL ■ FORCED ■ NO-REQUEST. <i>clkmod_stat</i> System clock mode status. This defines a state of the clock that is related to how it is referenced. Values: ■ FREE-RUNNING (initial value) 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. <i>clksw_stat</i> Starting with Release 1, this is the clock mode switch request state of the system timing. Values: ■ FORCED-HOLDOVER ■ ALL-REFERENCES-FAILED ■ NO-REQUEST. <i>clkmod</i> Clock Mode. Starting with Release 1.2, this parameter specifies what mode the system has been provisioned. Values: ■ FREE-RUNNING (initial value) ■ LOCKED.

Table 3-165. RTRV -SYNCN Output Parameters for Retrieving System Timing (cont 4 of 4)

Parameter Name	Description
<i>wtr</i>	Wait To Restore. For revertive switching, this is the amount of time it takes to switch from lower priority to higher priority references. Values: ■ 0 ■ 20SEC (initial value) ■ 1MIN ■ 2MIN...60MIN ■ 99 (infinite).
<i>tcs1</i>	Starting with Release 1.2, this parameter defines the Cable 1 Timing Collection Source. It specifies shelf AIDs for line references for both line timing references and output references. The shelf designation refers to the shelf to which the timing collection cable is attached which should be the first installed I/O shelf. Also, the line timing references are constrained to ports on that shelf. Values: ■ NO-CONNECTION (initial value) ■ Shelf AID. Starting with Release 3.0, the use of this parameter is discontinued.

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

Table 3-166. RTRV -SYNCN Output Parameters for Retrieving Assigned Timing Reference (cont 1 of 5)

Parameter Name	Description
<i>spec_block</i>	The following <i>spec_block</i> parameters are related to retrieve Assigned Timing Reference:

Table 3-166. RTRV-SYNCN Output Parameters for Retrieving Assigned Timing Reference (cont 2 of 5)

Parameter Name	Description
	<i>syncrefd1_prov</i> Assigned Timing Reference AID. This defines the first external timing reference that can be provisioned. Value: ■ EXTREF1. <i>syncrefd2_prov</i> Assigned Timing Reference AID. This defines the second external timing reference that can be provisioned. Value: ■ EXTREF2. <i>syncrefl1_prov</i> Assigned Timing Reference AID. This defines the first line timing reference that can be provisioned. Value: ■ LINE1. <i>treff1_aid</i> Timing Reference Assigned Port AID. This is the designated port AID of the <i>syncrefl1_prov</i> parameter. Values: ■ port AID of LINE1 ■ NOT-CONNECTED. (initial value) There is no timing reference signal assigned to the specified timing reference. <i>trefd1_aid</i> Timing Reference Assigned Port AID. This is the designated port AID of the <i>syncrefd1_prov</i> parameter. Values: ■ EXTTMG0 (port AID of EXTREF1) ■ NOT-CONNECTED. (initial value) There is no timing reference signal assigned to the specified timing reference. <i>trefd2_aid</i> Timing Reference Assigned Port AID. This is the designated port AID of the <i>syncrefd2_prov</i> parameter. Values: ■ EXTTMG1 (port AID of EXTREF2) ■ NOT-CONNECTED. (initial value) There is no timing reference signal assigned to the specified timing reference.

Table 3-166. RTRV-SYNCN Output Parameters for Retrieving Assigned Timing Reference (cont 3 of 5)

Parameter Name	Description
	<i>syncrefd1_pri</i> System Timing Reference Priority. This defines 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 (initial value) 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. <i>syncrefd2_pri</i> System Timing Reference Priority. This defines the priority for EXTREF2 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 (initial value) 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.

Table 3-166. RTRV-SYNCN Output Parameters for Retrieving Assigned Timing Reference (cont 4 of 5)

Parameter Name	Description
	<i>syncrefl1_pri</i> System Timing Reference Priority. This defines 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. This is the initial value. Otherwise, it implies revertive switching to the reference with the highest assigned priority. Values: ■ DISABLE (initial value) Indicates that reference is not used. ■ 1 Number 1 indicates the highest priority. ■ 2 The greater the number, the lower the priority. <i>refd1_stat</i> Assigned Timing Reference Signal Status. This shows the status of EXTREF1 timing reference. Values: ■ NORMAL ■ FAILED ■ WAIT-TO-RESTORE ■ NOT-CONNECTED (initial value) There is no timing reference signal assigned to the specified timing reference. <i>refd2_stat</i> Assigned Timing Reference Signal Status. This shows the status of EXTREF2 timing reference. Values: ■ NORMAL ■ FAILED ■ WAIT-TO-RESTORE ■ NOT-CONNECTED (initial value) There is no timing reference signal assigned to the specified timing reference.

Table 3-166. RTRV-SYNCN Output Parameters for Retrieving Assigned Timing Reference (cont 5 of 5)

Parameter Name	Description
	<i>refl1_stat</i> Assigned Timing Reference Signal Status. This shows the status of LINE1 timing reference. Values: ■ NORMAL ■ FAILED ■ WAIT-TO-RESTORE ■ NOT-CONNECTED (initial value) There is no timing reference signal assigned to the specified timing reference. <i>refd1_lock</i> This shows EXTREF1 timing reference lockout state. Values: ■ LOCKOUT ■ NO-LOCKOUT. <i>refd2_lock</i> This shows EXTREF2 timing reference lockout state. Values: ■ LOCKOUT ■ NO-LOCKOUT. <i>refl1_lock</i> This shows LINE1 timing reference lockout state. Values: ■ LOCKOUT ■ NO-LOCKOUT.

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

Table 3-167. RTRV-SYNCN Output Parameters for Retrieving Port (cont 1 of 4)

Parameter Name	Description
<i>spec_block</i>	The following <i>spec_block</i> parameters are related to retrieve Port.

Table 3-167. RTRV - SYNCN Output Parameters for Retrieving Port (cont 2 of 4)

Parameter Name	Description
	<i>tinpaid1</i> Starting with Release 2, this is External timing Input Port AID. Value: ■ EXTTMG0. <i>tinpaid2</i> Starting with Release 2, this is External timing Input Port AID. Value: ■ EXTTMG1. <i>toutpaid1</i> Starting with Release 2, this is External timing Port Out AID. Value: ■ EXTTMG0_OUT. <i>toutpaid2</i> Starting with Release 2, this is External timing Port Out AID. Value: ■ EXTTMG1_OUT. <i>ds11_if</i> This indicates the EXTREF1 input signal format. Value: ■ ESF (initial value). <i>ext1_if</i> Starting with Release 2.0, this parameter indicates the EXTREF1 input signal format. Value: ■ ESF (initial value). Starting with Release 3.0, this parameter can also have an additional value. Value: ■ SF. <i>ds12_if</i> This indicates the EXTREF2 input signal format. Value: ■ ESF (initial value). <i>ext2_if</i> Starting with Release 2.0, this parameter indicates the EXTREF2 input signal format. Value: ■ ESF (initial value).

Table 3-167. RTRV - SYNCN Output Parameters for Retrieving Port (cont 3 of 4)

Parameter Name	Description
	Starting with Release 3.0, this parameter can also have an additional value. Value: ■ SF. <i>ext1_of</i> Starting with Release 2.0, this parameter indicates the EXTREF1 output signal format. Values: ■ ESF (initial value) ■ SF. <i>ext2_of</i> Starting with Release 2, this parameter indicates the EXTREF2 output signal format. Values: ■ ESF (initial value) ■ SF. <i>ext1out_en</i> Starting with Release 2.0, this parameter enables or disables the first derived external timing output. Values: ■ ENABLE (initial value) ■ DISABLE. <i>ext2out_en</i> Starting with Release 2, this parameter enables or disables the second derived external timing output. Values: ■ ENABLE (initial value) ■ DISABLE. <i>ext1_equ</i> Starting with Release 2, this indicates the timing output equalization to adjust the first timing reference output signal power. The following values are represented by percentage. Values: ■ 20 (initial value) ■ 40 ■ 60 ■ 80 ■ 100.

Table 3-167. RTRV - SYNCN Output Parameters for Retrieving Port (cont 4 of 4)

Parameter Name	Description
	<i>ext2_equ</i> Starting with Release 2, this indicates the timing output equalization to adjust the second timing reference output signal power. The following values are represented by percentage. Values: ■ 20 (initial value) ■ 40 ■ 60 ■ 80 ■ 100. <i>ext1out_prov</i> Starting with Release 2.0, this parameter is related to timing output signals. It connects or disconnects derived external timing output source selection for the first output. Values: ■ NO-CONNECTION (initial value) ■ LINE1. <i>ext2out_prov</i> Starting with Release 2, this parameter is related to timing output signals. It connects or disconnects derived external timing output source selection for the second output. Values: ■ NO-CONNECTION (initial value) ■ LINE1. <i>ext1out_sig_stat</i> Starting with Release 2, this parameter for output signal status. Values: ■ NORMAL ■ DISABLE ■ UNACCEPTABLE. <i>ext2out_sig_stat</i> Starting with Release 2, this parameter for output signal status. Values: ■ NORMAL ■ DISABLE ■ UNACCEPTABLE.

EXAMPLE INPUT/OUTPUT

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

```
RTRV-SYNCN:LT-WBM::123456;  
  
LT-WBM 98-01-01 08:00:00  
M 123456 COMPLD  
"stratum_level=3,sysql_stat=st3,syssig_stat=normal,clkmod_stat=  
locked,"  
"fs_stat=normal,wu_stat=normal,"  
"clksw_stat=no-request,syncrefd1_prov=extref1,syncrefd2_prov=  
extref2,"  
"trefd1_aid=exttmg0,trefd2_aid=exttmg1,"  
"syncrefd1_pri=1,syncrefd2_pri=2,"  
"active_ref=extref1,refd1_stat=normal,refd2_stat=  
not-connected,"  
"refsw_stat=no-request,refd1_lock=no-lockout,refd2_lock=  
no-lockout,"  
"wtr=20sec,ext1_if=esf,ext2_if=esf,timing=att"  
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

SET-SYNCN

OPR-SYNCNSW

RLS-SYNCNSW

NAME

RTRV - TACC: Retrieve Test Access

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

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): T1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV - TACC - *modifier: tid: aid: ctag;*

DESCRIPTION

The **RTRV - TACC** command can be initiated by a user to retrieve the test access-related information on one or all of the test tributaries in the network element. Only the primary test tributary is retrieved.

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

INPUT PARAMETERS

Table 3-168. RTRV - TACC Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>modifier</i>	Modifier indicates the cross-connection rate on which the retrieve test access command is to act on. Values: ■ STS1 ■ ALL

Table 3-168. RTRV - TACC Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ STS3 ■ STS12 ■ STS48 ■ VC3 ■ VC4 ■ VC44C ■ VC416C
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. The <i>aid</i> specifies the test tributary for which the test access activity is retrieved. ALL is a valid value. When ALL is specified, the information on all the test tributaries that are currently under test and/or the tributaries that are provisioned as test tributaries are retrieved. See the AID table in OSEG Appendix A. Value: logical, shelf, port, slot AID.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.

OUTPUT FORMAT

The network element returns the following normal response for a successful **RTRV - TACC** command:

```

sid date time
M ctag COMPLD
  "tatrib1:rate:spec_block"
  .
  .
  .
  "tatrib1:rate:spec_block"
;

```

The network element returns the following normal completion response for a successful **RTRV - TACC** command if no test access activity is found on the specified port in the system:

```
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.

Table 3-169. RTRV - TACC Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>tatrib1</i>	Retrieves the primary Test Access Tributary. Value: tributary AID. See the AID table in OSEG Appendix A.
<i>rate</i>	Specifies the rate of the signal that is being tested. Values: STS1.
<i>spec_block</i>	<i>tstmde</i> Retrieves the secondary Test Access Tributary, if it is provisioned. Value: tributary AID. See the AID table in OSEG Appendix A. <i>tatrib2</i> Retrieves the secondary Test Access Tributary, if it is provisioned. Value: tributary AID. See the AID table in OSEG Appendix A. <i>etrib</i> Retrieves the E-tributary AID for the test session. If there is no test activity, this parameter is omitted. Value: tributary AID. <i>eomode</i> Retrieves the output mode of the E-tributary. Values: NORM, IDLE/UNEQ, AIS. Note: Output mode IDLE is for DS3 tributaries and UNEQ is for tributaries from Sonet interfaces. <i>ftrib</i> Retrieves the current F-tributary for the test session. If there is no F-tributary, this parameter is omitted. Value: tributary AID.

Table 3-169. RTRV - TACC Output Parameters (cont 2 of 2)

Parameter Name	Description
	<i>fomode</i> Retrieves the output mode of the F-tributary. If the F-tributary is omitted, this parameter is also omitted. Values: ■ NORM ■ IDLE/UNEQ ■ AIS. Note: Output mode IDLE is for DS3 tributaries and UNEQ is for tributaries from SONET interfaces.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of **RTRV - TACC** command by the network element. The example below retrieves the test tributary state and test access mode along with E-end and F-end tributary output mode information on a non-THROUGH 2WAY cross-connection with a test access session established on it:

```
RTRV-TACC-STS1:LT-WBM-789:ALL:123456;

LT-WBM-789 99-05-07 17:21:33
M 123456 COMPLD
"24-2-#-#-04-6-1:STS1:TSTMDE=MONEF,TATRIB2=12-1-#-#-05-7-
1,ETRIB=15-2-#-#-06-5-1,EOMODE=NORM,FTRIB=3-1-#-#-04-5-1,FOMODE=NORM"
;
```

ERROR RESPONSES

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

RELATED TL1 MESSAGES

CONN - TACC

DISC - TACC

RTRV-TACC
BWM TL1 Message Details

RTRV-TACC
WaveStar™ BandWidth Manager R3.1

CHG - ACCMD

NAME

RTRV-TCA-ASGNMT: Retrieve TCA Assignment

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

- WaveStar BandWidth Manager, Release 2.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): PM1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-TCA-ASGNMT : *tid:aid:ctag::pftype,pfname;*

DESCRIPTION

The **RTRV-TCA-ASGNMT** command allows the user to retrieve a list of AIDs that have been assigned to the specified profile type and name. For a general description of TCA profiles, refer to the **ENT-TCA-PROF** command.

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

INPUT PARAMETERS

Table 3-170. RTRV-TCA-ASGNMT Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. See the AID table in OSEG Appendix A. Value: shelf AID .
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.

Table 3-170. RTRV-TCA-ASGNMT Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>pftype</i>	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ PHYSICAL ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC
<i>pfname</i>	Profile Name. This indicates the name of the PM TCA profile.

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 3-171. RTRV-TCA-ASGNMT Output Parameters

Parameter Name	Description
<i>aid</i>	Access Identifier. This is the address of the ports or tributaries for which there is an assigned PM TCA profile.
<i>dirn</i>	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".
<i>pftype</i>	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ PHYSICAL ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC.
<i>pfname</i>	Profile Name. This indicates the name of the PM TCA profile.

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 98-01-01 08:00:00  
M 123456 COMPLD  
"ds3,sprint:1-1-u-#-163,in"  
"ds3,sprint:1-1-u-#-165,out"  
"ds3,sprint:1-1-u-#-168,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.

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 BandWidth Manager, Release 1.3

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 3-172. RTRV-TCA-PROF Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>pftype</i>	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values:

Table 3-172. RTRV-TCA-PROF Input Parameters (cont 2 of 2)

Parameter Name	Description
	■ PHYSICAL ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC
<i>pfname</i>	Profile Name. If this field is NULL, the output will only consist of a list of all profile names for the specific profile type that was requested. If a valid profile name is inserted in this field, the output will display the parameters within the profile with their values. The system supports two default sets of profiles called "Default" and "Default0."

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.

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 3-173. RTRV - TCA - PROF Output Parameters (cont 1 of 10)

Parameter Name	Description
<i>pftype</i>	Profile Type. This indicates the type of PM TCA profile for the selected facility. Values: ■ PHYSICAL ■ SECTION-LINE ■ PATH ■ DS3 ■ RS-MS ■ HOVC
<i>pfname</i>	Profile Name. This indicates the name(s) of the PM TCA profile.
<i>spec_block</i>	The following parameters belong to PHYSICAL profile type. <i>lbc</i> Laser Bias Current. Values: 0, 1. (1) <i>opt</i> Optical Transmitter. Values: 0, 1. (1) <i>opr</i> Optical Receiver. Values: 0, 1. (1) The following parameters belong to SECTION-LINE profile type. <i>qhcvsoc3</i> 15-minute CV-S bin for OC-3. Range: 0-16777215 (140)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 2 of 10)

Parameter Name	Description
	<i>daycvsoc3</i> Day CV-S bin for OC-3. Range: 0-2147483647 ** (1344) <i>qhcvsoc12</i> 15-minute CV-S bin for OC-12. Range: 0-16777215 (560) <i>daycvsoc12</i> Day CV-S bin for OC-12. Range: 0-2147483647 ** (5376) <i>qhcvsoc48</i> 15-minute CV-S bin for OC-48. Range: 0-16777215 (2240) <i>daycvsoc48</i> Day CV-S bin for OC-48. Range: 0-2147483647 ** (21504) <i>qhcvsoc192</i> 15-minute CV-S bin for OC-192. Range: 0-16777215 (8960) <i>daycvsoc192</i> Day CV-S bin for OC-192. Range: 0-2147483647 ** (86016) <i>qhess</i> 15-minute ES-S bin. Range: 0-900 (25) <i>dayess</i> Day ES-S bin. Range: 0-86400 (250) <i>qhseess</i> 15-minute SES-S bin. Range: 0-810 (10) <i>daysess</i> Day SES-S bin. Range: 0-77760 (40) <i>qhsefss</i> 15-minute SEFS-S bin. Range: 0-900 (5) <i>daysefss</i> Day SEFS-S bin. Range: 0-86400 (10) <i>qhcvlec1</i> 15-minute CV-L and CV-LFE bin for EC-1 Range: 0-16777215 * (47) <i>daycvlec1</i> Day CV-L and CV-LFE bin for EC-1. Range: 0-2147483647 ** (448) <i>qhcvloc3</i> 15-minute CV-L and CV-LFE bin for OC-3. Range: 0-16777215 * (140) <i>daycvloc3</i> Day CV-L and CV-LFE bin for OC-3. Range: 0-2147483647 ** (1344)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 3 of 10)

Parameter Name	Description
	<i>qhcvloc12</i> 15-minute CV-L and CV-LFE bin for OC-12. Range: 0-16777215 * (560) <i>daycvloc12</i> Day CV-L and CV-LFE bin for OC-12. Range: 0-2147483647 ** (5376) <i>qhcvloc48</i> 15-minute CV-L and CV-LFE bin for OC-48. Range: 0-16777215 * (2240) <i>daycvloc48</i> Day CV-L and CV-LFE bin for OC-48. Range: 0-2147483647 ** (21504) <i>qhcvloc192</i> 15-minute CV-L and CV-LFE bin for OC-192. Range: 0-16777215 * (8960) <i>daycvloc192</i> Day CV-L and CV-LFE bin for OC-192. Range: 0-2147483647 ** (86016) <i>qhesl</i> 15-minute ES-L and ES-LFE bin. Range: 0-900 (25) <i>dayesl</i> Day ES-L and ES-LFE bin. Range: 0-86400 (250) <i>qhsesl</i> 15-minute SES-L and SES-LFE bin. Range: 0-810 (10) <i>daysesl</i> Day SES-L and SES-LFE bin. Range: 0-77760 (40) <i>qhfeccl</i> 15-minute FECC-L OC-192 bin. Range: 0-5184000 (5184) <i>dayfeccl</i> Day FECC-L OC-192 bin. Range: 0-497664000 (497664) <i>qhfecul</i> 15-minute FECU-L OC-192 bin. Range: 0-2592000 (2592) <i>dayfecul</i> Day FECU-L OC-192 bin. Range: 0-248832000 (248832) <i>qhual</i> 15-minute UAS-L and UAS-LFE bin. Range: 0-900 (10) <i>dayual</i> Day UAS-L and UAS-LFE bin. Range: 0-86400 (10) The following parameters belong to PATH profile type:

Table 3-173. RTRV-TCA-PROF Output Parameters (cont 4 of 10)

Parameter Name	Description
	<i>qhcvpsts1</i> 15-minute CV-P and CV-PFE bin for STS-1. Range: 0-65535 & (15) <i>daycvpsts1Day</i> CV-P and CV-PFE bin for STS-1. Range: 0-8388607 && (125) <i>qhcvpsts3c15</i> 15-minute CV-P and CV-PFE bin for STS-3c. Range: 0-65535 & (25) <i>daycvpsts3cDay</i> CV-P and CV-PFE bin for STS-3c. Range: 0- 8388607 && (250) <i>qhcvpsts12c15</i> 15-minute CV-P and CV-PFE bin for STS-12c. Range: 0-16777215 * (75) <i>daycvpsts12cDay</i> CV-P and CV-PFE bin for STS-12c. Range: 0-2147483647 ** (750) <i>qhcvpsts48c15</i> 15-minute CV-P and CV-PFE bin for STS-48c. Range: 0-16777215 * (300) <i>daycvpsts48cDay</i> CV-P and CV-PFE bin for STS-48c. Range: 0-2147483647 ** (3000) <i>qhespsts1</i> 15-minute ES-P and ES-PFE bin for STS-1. Range: 0-900 (12) <i>dayespsts1Day</i> ES-P and ES-PFE bin for STS-1. Range: 0-86400 (100) <i>qhespsts3c15</i> 15-minute ES-P and ES-PFE bin for STS-3c. Range: 0-900 (20) <i>dayespsts3cDay</i> ES-P and ES-PFE bin for STS-3c. Range: 0-86400 (200) <i>qhespsts12c15</i> 15-minute ES-P and ES-PFE bin for STS-12c. Range: 0-900 (60) <i>dayespsts12cDay</i> ES-P and ES-PFE bin for STS-12c. Range: 0-86400 (600) <i>qhespsts48c15</i> 15-minute ES-P and ES-PFE bin for STS-48c. Range: 0-900 (240) <i>dayespsts48cDay</i> ES-P and ES-PFE bin for STS-48c. Range: 0-86400 (2400) <i>qhseps</i> 15-minute SES-P and SES-PFE bin. Range: 0-810 (3)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 5 of 10)

Parameter Name	Description
	<i>daysesp</i> Day SES-P and SES-PFE bin. Range: 0-77760 (7) <i>qhuasp</i> 15-minute UAS-P and UAS-PFE bin. Range: 0-900 (10) <i>dayuasp</i> Day UAS-P and UAS-PFE bin. Range: 0-86400 (10) <i>qhppjcgen</i> 15-minute PPJC-PGen bin. Range: 0-32767 (30) <i>dayppjcgen</i> Day PPJC-PGen bin. Range: 0-2097151 (2880) <i>qhnpjcgen</i> 15-minute NPJC-PGen bin. Range: 0-32767 (30) <i>daynpjcgen</i> Day NPJC-PGen bin. Range: 0-2097151 (2880) <i>qhppjcdet</i> 15-minute PPJC-PDet bin. Range: 0-32767 (30) <i>dayppjcdet</i> Day PPJC-PDet bin. Range: 0-2097151 (2880) <i>qhnpjcdet</i> 15-minute NPJC-PDet bin. Range: 0-32767 (30) <i>daynpjcdet</i> Day NPJC-PDet bin. Range: 0-2097151 (2880) The following parameters belong to DS3 profile type: <i>qhcvl</i> 15-minute CV-L bin. Range: 0-16383 (387) <i>daycvl</i> Day CV-L bin. Range: 0-1048575 (3865) <i>qhesl</i> 15-minute ES-L bin. Range: 0-900 (25) <i>dayesl</i> Day ES-L bin. Range: 0-86400 (250) <i>qhsesl</i> 15-minute SES-L bin. Range: 0-900 (4)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 6 of 10)

Parameter Name	Description
	<i>daysesl</i> Day SES-L bin. Range: 0-86400 (40) <i>qhcvp</i> 15-minute CV-P and CV-PFE bin. Range: 0-16383 (382) <i>daycvp</i> Day CV-P and CV-PFE bin. Range: 0-1048575 (3820) <i>qhesp</i> 15-minute ES-P and ES-PFE bin. Range: 0-900 (25) <i>dayesp</i> Day ES-P and ES-PFE bin. Range: 0-86400 (250) <i>qhesap</i> 15-minute ESA-P and ESA-PFE bin. Range: 0-900 (25) <i>dayesap</i> Day ESA-P and ESA-PFE bin. Range: 0-86400 (250) <i>qhesbp</i> 15-minute ESB-P and ESB-PFE bin. Range: 0-900 (25) <i>dayesbp</i> Day ESB-P and ESB-PFE bin. Range: 0-86400 (250) <i>qhseps</i> 15-minute SES-P and SES-PFE bin. Range: 0-810 (4) <i>daysesp</i> Day SES-P and SES-PFE bin. Range: 0-77760 (40) <i>qhsasp</i> 15-minute SAS-P and SAS-PFE bin. Range: 0-900 (2) <i>daysasp</i> Day SAS-P and SAS-PFE bin. Range: 0-86400 (8) <i>qhuasp</i> 15-minute UAS-P and UAS-PFE bin. Range: 0-900 (10) <i>dayuasp</i> Day UAS-P and UAS-PFE bin. Range: 0-86400 (10) The following parameters belong to SDH RS-MS profile type: <i>qhrsnes</i> 15-minute RS_N_ES bin. Range: 0-900 (180)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 7 of 10)

Parameter Name	Description
	<i>daysnes</i> Day RS_N_ES bin. Range: 0-86400 (1500) <i>qhrsnses</i> 15-minute RS_N_SES bin. Range: 0-810 (15) <i>daysnses</i> Day RS_N_SES bin. Range: 0-77760 (20) <i>qhrsnbbe</i> 15-minute RS_N_BBE bin. Range: 0-7199100 (9000) <i>daysnbbe</i> Day RS_N_BBE bin. Range: 0-691113600 (48000) <i>qhrsnuas</i> 15-minute RS_N_UAS bin. Range: 0-900 (15) <i>daysnuas</i> Day RS_N_UAS bin. Range: 0-86400 (20) The following parameters belong to SDH MS profile type: <i>qhmses</i> 15-minute MS_N_ES and MS_F_ES bin. Range: 0-900 (50) <i>daymses</i> Day MS_N_ES and MS_F_ES bin. Range: 0-86400 (150) <i>qhms ses</i> 15-minute MS_N_SES and MS_F_SES bin. Range: 0-810 (10) <i>dayms ses</i> Day MS_N_SES and MS_F_SES bin. Range: 0-77760 (15) <i>qhmsbbestm1</i> 15-min MS_N_BBE and MS_F_BBE stm1 bin. Range: 0-16777215 *(228000) <i>daymsbbestm1</i> Day MS_N_BBE and MS_F_BBE stm1 bin. Range: 0-2147483647 ** (432000) <i>qhmsbbestm4</i> 15-min MS_N_BBE and MS_F_BBE stm4 bin. Range: 0-16777215 *(912000) <i>daymsbbestm4</i> Day MS_N_BBE and MS_F_BBE stm4 bin. Range: 0-2147483647 ** (1728000) <i>qhmsbbestm16</i> 15-min MS_N_BBE/MS_F_BBE stm16 bin. Range: 0-16777215 *(3648000)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 8 of 10)

Parameter Name	Description
	<i>daymsbbestm16</i>Day MS_N_BBE and MS_F_BBE stm16 bin. Range: 0-2147483647 *(6912000) <i>qhmsbbestm64</i>15-min MS_N_BBE/MS_F_BBE stm64 bin. Range: 0-16777215 *(14592000) <i>daymsbbestm64</i>Day MS_N_BBE and MS_F_BBE stm64 bin. Range: 0-2147483647 *(27648000) <i>qhmsuas</i> 15-min MS_N_UAS/MS_F_UAS stm64 bin. Range: 0-900(15) <i>daymsuas</i> Day MS_N_UAS and MS_F_UAS stm64 bin. Range: 0-86400(20) <i>qhmsnfeccl15</i>-min MS_N_FECC stm64 bin. Range: 0-5184000(5184) <i>daymsnfeccl</i>Day MS_N_FECC stm64 bin. Range: 0-497664000 (497664) <i>qhmsnfecul15</i>-min MS_N_FECU stm64 bin. Range: 0-2592000 (2592) <i>daymsnfecul</i>Day MS_N_FECU stm64 bin. Range: 0-248832000 (248832) The following parameters belong to SDH HOVC profile type: <i>qhvcsvcl3</i>15-minute VC_N_ES and VC_F_ES VC3 bin. Range: 0-900 (150) <i>dayvcsvcl3</i>Day VC_N_ES and VC_F_ES VC3 bin. Range: 0-86400 (600) <i>qhvcsvcl4</i>15-minute VC_N_ES and VC_F_ES VC4 bin. Range: 0-900 (180) <i>dayvcsvcl4</i>Day VC_N_ES and VC_F_ES VC4 bin. Range: 0-86400 (1500) <i>qhvcsvcl4c15</i>15-minute VC_N_ES/VC_F_ES VC4-4C bin. Range: 0-900 (180) <i>dayvcsvcl4c</i>Day VC_N_ES/VC_F_ES VC4-4C bin. Range: 0-86400 (1500) <i>qhvcsvcl416c</i>15-minute VC_N_ES/VC_F_ES VC4-16C bin. Range: 0-900 (180)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 9 of 10)

Parameter Name	Description
	<i>dayvcesvc416c</i> Day VC_N_ES/VC_F_ES VC4-16C bin. Range: 0-86400 (1500)
	<i>qhvcsvcsvc315</i> -minute VC_N_SES/VC_F_SES VC3 bin. Range: 0-810 (15)
	<i>dayvcsesvc3</i> Day VC_N_SES/VC_F_SES VC3 bin. Range: 0-77760 (20)
	<i>qhvcsvcsvc415</i> -minute VC_N_SES/VC_F_SES VC4 bin. Range: 0-810 (15)
	<i>dayvcsesvc4</i> Day VC_N_SES/VC_F_SES VC4 bin. Range: 0-77760 (20)
	<i>qhvcsvcsvc44c</i> 15-minute VC_N_SES/VC_F_SES VC44C bin. Range: 0-810 (15)
	<i>dayvcsesvc44c</i> Day VC_N_SES/VC_F_SES VC44C bin. Range: 0-77760 (20)
	<i>qhvcsvcsvc416c</i> 15-minute VC_N_SES/VC_F_SES VC416C bin. Range: 0-810 (15)
	<i>dayvcsesvc416c</i> Day VC_N_SES/VC_F_SES VC416C bin. Range: 0-77760 (20)
	<i>qhvcbbevc315</i> -minute VC_N_BBE/VC_F_BBE VC3 bin. Range: 0-65535 &(36000)
	<i>dayvcbbevcs3</i> Day VC_N_BBE/VC_F_BBE VC3 bin. Range: 0-8388607 &&(48000)
	<i>qhvcbbbevcs415</i> -minute VC_N_BBE/VC_F_BBE VC4 bin. Range: 0-65535 &(36000)
	<i>dayvcbbevcs4</i> Day VC_N_BBE/VC_F_BBE VC4 bin. Range: 0-8388608 &&(48000)
	<i>qhvcbbbevcs44c</i> 15-minute VC_N_BBE/VC_F_BBE VC44C bin. Range: 0-16777215 *(36000)
	<i>dayvcbbevcs44c</i> Day VC_N_BBE/VC_F_BBE VC44C bin. Range: 0-2147483647 **(48000)
	<i>qhvcbbbevcs416c</i> 15-minute VC_N_BBE/VC_F_BBE VC416C bin. Range: 0-16777215 *(36000)
	<i>dayvcbbevcs416c</i> Day VC_N_BBE/VC_F_BBE VC416C bin. Range: 0-2147483647 **(48000)

Table 3-173. RTRV - TCA - PROF Output Parameters (cont 10 of 10)

Parameter Name	Description
	<i>qhvcuasvc3</i> 15-minute VC_N_UAS/VC_F_UAS VC3 bin. Range: 0-900 (15)
	<i>dayvcuasvc3</i> Day VC_N_UAS/VC_F_UAS VC3 bin. Range: 0-86400 (20)
	<i>qhvcuasvc4</i> 15-minute VC_N_UAS/VC_F_UAS VC4 bin. Range: 0-900 (15)
	<i>dayvcuasvc4</i> Day VC_N_UAS/VC_F_UAS VC4 bin. Range: 0-86400 (20)
	<i>qhvcuasvc44c</i> 15-minute VC_N_UAS/VC_F_UAS VC44C bin. Range: 0-900 (15)
	<i>dayvcuasvc44c</i> Day VC_N_UAS/VC_F_UAS VC44C bin. Range: 0-86400 (20)
	<i>qhvcuasvc416c</i> 15-minute VC_N_UAS/VC_F_UAS VC416C bin. Range: 0-900 (15)
	<i>dayvcuasvc416c</i> Day VC_N_UAS/VC_F_UAS VC416C bin. Range: 0-86400 (20)

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 98-01-01 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 98-01-01 08:00:00  
M 123456 COMPLD  
"ds3,att:qhcvl=387,daycvl=3500,qhesl=25,dayesl=250,"  
"ds3,att:qhsecl=4,dayescl=33,qhcvp=382,daycvp=3820,"  
"ds3,att:qhesp=25,dayesp=210,qhesap=15,dayesap=250,"  
"ds3,att:qhesbp=20,dayesbp=250,qhesep=4,dayesep=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.

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 BandWidth Manager Release 1.2

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 3-174. RTRV-ULS Input Parameters (cont 1 of 2)

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

Table 3-174. RTRV-ULS Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1.2. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
<i>ctag</i>	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 3-175. RTRV-ULS Output Parameters (cont 1 of 2)

Parameter Name	Description
<i>spec_block</i>	The following are the <i>spec_block</i> parameters. <i>dsa_nsap</i> DSA NSAP Address. This parameter is available starting in Release 1.2. This parameter belongs to RM type. It displays the NSAP address of the DSA. Value: A string of 20-byte (40-digit hex) NSAP address.

Table 3-175. RTRV-ULS Output Parameters (cont 2 of 2)

Parameter Name	Description
<i>dsaip</i>	DSA IP Address. This parameter is available starting in Release 2. This parameter belongs to RM type. It displays the IP address of the DSA. Value: It is made up of four dot-separated decimal numbers ranging from 0 to 255. This parameter returns an empty string ("") if the value has not been provisioned.
<i>rm</i>	Registration Manager. This parameter is available starting in Release 1.2. This function helps new network elements in a Level 1 OSI area register themselves in the appropriate directory, which may be on this system or may be on a remote system. Values: ■ ENABLE ■ DISABLE. This parameter can only be enabled for the subrack shelves.
<i>np_co</i>	Name Prefix Country. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the country field of the name prefix parameter. It indicates the highest level of the directory tree. Value: Consists of 2 alphanumeric characters.
<i>np_org</i>	Name Prefix Organization. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the organization field of the name prefix parameter. Its level is just below country in the directory tree. Value: Consists of 1 to 64 alphanumeric characters.
<i>np_orgu1</i>	Name Prefix Organization Unit 1. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the organization unit one of the name prefix parameter. Its level is just below organization in the directory tree. Value: Consists of 1 to 64 alphanumeric characters.
<i>np_orgu2</i>	Name Prefix Organization Unit 2. This parameter is available starting in Release 1.2. This parameter belongs to RM type. This is the organization unit two of the name prefix parameter. Its level is just below organization unit one in the directory tree. Value: Consists of 1 to 64 alphanumeric characters.

EXAMPLE INPUT/OUTPUT

The following example shows the successful completion of the **RTRV-ULS** command by the Network Communications Controller:

```
RTRV-ULS:LT-WBM::123456;  
  
LT-WBM 98-01-01 08:00:00  
M 123456 COMPLD  
"dsa_nsap=39840F8000000007AE0000000012345678901200"  
"np_co=us"  
"dsa_nsap=39840F8000000007AE0000000012345678901200"  
"np_org=abcd1234"  
"np_orgu1=xyz98765"  
"np_orgu2=""  
"ip_ad=198.78.46.8"  
"ip_snm=255.255.255.128"  
"ip_drad=198.84.65.20"  
"lv_port=3081"  
"raw_port=3082"  
"telnet_port=3083"  
;
```

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

ENT-ULS

ENT-ULSDCC-L3

ENT-ULSDCC-L4

RTRV-ULSDCC-L3

RTRV-ULSDCC-L4

DLT-ULSDCC-L4

NAME

RTRV-ULSDCC-L3: Retrieve Upper Layer Stack DCC Layer 3

The **RTRV-ULSDCC-L3** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

1.

INPUT FORMAT

RTRV-ULSDCC-L3: *tid:aid:ctag;*

DESCRIPTION

The **RTRV-ULSDCC-L3** command is used to retrieve the parameters in Layer 3 of the OSI stack. Layer 3 parameters include the fields of the Network Service Access Point (NSAP) address. The NSAP provides unique identification for each network element in a subnetwork.

The **RTRV-ULSDCC-L3** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-176. RTRV-ULSDCC-L3 Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. An AID range using the ALL keyword is allowed, but only within one shelf. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.

Table 3-176. RTRV-ULSDCC - L3 Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	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 1.3, 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 3-177. RTRV-ULSDCC-L3 Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>aid</i>	This parameter is available starting in Release 1.3. Access Identifier. See the AID table in OSEG Appendix A. Value: datacom AID (DCC circuit pack AID).
<i>spec_block</i>	<i>/3idp</i> 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. <i>/3afi</i> NSAP Authority and Format Identifier. This parameter is available starting in Release 3.1. This is a 1 octet (2-digit hexadecimal) field to specify the format for the rest of the address. The initial value is 39 hex, which identifies the iso_dcc format. <i>/3idi</i> NSAP Initial Domain Identifier. This parameter is available starting in Release 3.1. This is a 2 octet (4-digit hexadecimal) field to specify the country code indicating the registration authority responsible for the allocation and assignment of the NSAP address. The initial value is 0000 hex, which identifies the global registration authority. <i>/3dfi</i> DSP (Domain Specific Part) Format Identifier. This parameter is available starting in Release 1. This consists of the next octet (2-digit hex) of the NSAP address. The purpose of this octet is to specify the format for the rest of the address. The initial value of DFI is set to 80 hex. <i>/3org</i> Organization Identifier. This parameter is available starting in Release 1. This field makes up the next 3 octets (6-digit hex) to provision into the NSAP address, the allocated Company Code. The initial value for this parameter is 000000 hex.

Table 3-177. RTRV-ULSDCC - L3 Output Parameters (cont 2 of 3)

Parameter Name	Description
<i>/3res</i>	NSAP Reserved. This parameter is available starting in Release 1. This field makes the next 2 octets (4-digit hex) that currently has not been assigned a specific purpose by the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. The initial value for this parameter is 0000 hex.
<i>/3rd</i>	NSAP Routing Domain. This parameter is available starting in Release 1. This NSAP field identifies a unique Routing Domain within an administrative domain. Standard use of this parameter has not been defined in the standards. Until the standard use of this field has been defined, users should not assign a value that is different from the initial value. This makes the next 2 octets (4-digit hex) field with the initial value of 0000 hex.
<i>/3area</i>	NSAP Area Identifier. This parameter is available starting in Release 1. This field is used to identify NEs in the same area. Where multiple areas are defined, Level 2 IS needs to be provisioned to allow addressing across areas. This field consists of the next 2 octets (4-digit hex) of the NSAP address.
<i>/3sys</i>	System Identifier. This parameter is available starting in Release 1. This field consists of the next 6 octets (12-digit hex) of the NSAP address. The purpose of this field is to guarantee that the NSAP address is globally unique.
<i>/3sel</i>	NSAP Selector. This parameter is available starting in Release 1. This consists of the last octet (2-digit hex) of the address. Its purpose is to differentiate multiple NSAP addresses associated with the same End System. Its value is not fixed and changes according to its usage. It is set to AF hex when TARP is run over CLNP. It has a value of 1D hex when TP4 is run over CLNP. It may be set to 00 hex for other uses. When retrieved and displayed, it will always be shown as 00 hex.

Table 3-177. RTRV-ULSDCC - L3 Output Parameters (cont 3 of 3)

Parameter Name	Description
	<i>/3lv2is</i> This parameter is available starting in Release 1.2. This parameter enables or disables the network element specified by the <i>tid</i> as a Level 2 IS, in addition to being a Level 1 IS. Values: ■ DISABLE ■ ENABLE. The initial value is DISABLE. <i>/3isct</i> Intermediate System Configuration Timer. This parameter is available starting in Release 1. This field is used when the network element is acting in the Intermediate System role. Values: 10 - 1000 seconds. The initial value is 10 seconds. <i>/3lc</i> CLNP Lifetime Control parameter. This parameter is available starting in Release 2. 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.

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 98-01-01 08:00:00
M 123456 COMPLD
"L3IDP=39840F"
"L3DFI=80"
"L3ORG=000000"
"L3RES=0000"
"L3RD=0000"
"L3AREA=0000"
"L3SYS=08006A112345"
"L3SEL=00"
"L3LV2IS=disable"
"L3ISCT=10"
"MA1IDP=39840F"
"MA1DFI=80"
"MA1ORG=000000"
"MA1RES=0000"
"MA1RD=0000"
"MA1AREA=0000"
"MA2IDP=39840F"
"MA2DFI=80"
"MA2ORG=000000"
"MA2RES=0000"
"MA2RD=0000"
"MA2AREA=0000"
;
```

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

ENT-ULSDCC-L3

ENT-ULSDCC-L4

RTRV-ULSDCC-L4

DLT-ULSDCC-L4

NAME

RTRV-ULSDCC-L4: Retrieve Upper Layer Stack DCC Layer 4

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

COMMAND PRIORITY

- 1.

INPUT FORMAT

RTRV-ULSDCC-L4: *tid:aid:ctag;*

DESCRIPTION

The **RTRV-ULSDCC-L4** command is used to retrieve the parameters in Layer 4 of the OSI stack, many of which are provisioned by the **ENT-ULSDCC-L4** command. Layer 4 parameters include some TARP and the TARP Manual Adjacencies parameters.

The **RTRV-ULSDCC-L4** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-178. RTRV-ULSDCC-L4 Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1. An AID range using the ALL keyword is allowed, but only within one shelf. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.

Table 3-178. RTRV - ULSDCC - L4 Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>ctag</i>	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 1.3, 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 3-179. RTRV - ULSDCC - L4 Output Parameters (cont 1 of 4)

Parameter Name	Description
<i>aid</i>	Access Identifier. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
<i>spec_block</i>	<i>l4lftm</i> TARP Loop Detection Buffer Flush Timer. This parameter is available starting in Release 1. It sets the time period for flushing the TARP Loop Detection Buffer. Values: 1 - 1440 minutes. The initial value is 5 minutes. <i>l4letm</i> TARP Loop Detection Buffer Entry Timer. This parameter is available starting in Release 1. It sets the LDB time period for discarding TARP PDUs after a TARP PDU has been received with a sequence number equal to zero. Values: 1 - 10 minutes. The initial value is 5 minutes. <i>l4etof</i> This parameter is available starting in Release 1.2. This parameter is used to enable or disable TARP Origination Functions. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE. <i>l4etpf</i> This parameter is available starting in Release 1. This parameter is used to enable or disable TARP Propagation Functions. Values: ■ ENABLE ■ DISABLE. The initial value is ENABLE. <i>l4etrf</i> This parameter is available starting in Release 1. This parameter is used to enable or disable TARP Responder Functions. Values: ■ ENABLE ■ DISABLE.

Table 3-179. RTRV-ULSDCC-L4 Output Parameters (cont 2 of 4)

Parameter Name	Description
	The initial value is ENABLE. For subrack shelves, the initial value is DISABLE. <i>l4ajnsap</i> This parameter is available starting in Release 1. This parameter specifies the NSAP address portion of an entry in the TARP Manual Adjacent network element. It is a 20 octet (40-digit hex) long address. Up to two NSAP addresses may be displayed. <i>l4tlif</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Lifetime field when the system originates a TARP PDU. It specifies the maximum number of hops allowed for a TARP PDU. If this value is exceeded, the TARP PDU will not be forwarded. Values: 1 - 65535. The initial value is 100 hops. <i>l4t1tm</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Timer T1. T1 is the maximum time allowed for response to TARP TYPE1 request PDU (search level 1 routing area). Values: 1 - 3600. The initial value is 15 seconds. <i>l4t2tm</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Timer T2. T2 is the maximum time allowed for response to TARP TYPE2 request PDU (search outside of the level 1 area). Values: 1 - 3600. The initial value is 25 seconds. <i>l4t3tm</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Timer T3. T3 is the maximum time allowed for response to TARP TYPE5 request PDU (requesting the TID when the NSAP address is known). Values: 1- 3600. The initial value is 40 seconds.

Table 3-179. RTRV-ULSDCC-L4 Output Parameters (cont 3 of 4)

Parameter Name	Description
	<i>l4t4tm</i> This parameter is available starting in Release 1.2. This parameter sets the TARP Timer T4. Timer T4 starts when T2 expires. It is used for error recovery. Values: 1- 3600. The initial value is 20 seconds. <i>l4etdc</i> This parameter is available starting in Release 1.2. This parameter is used to enable or disable the TARP Data Cache. Values: ■ DISABLE ■ ENABLE. The initial value is ENABLE. Starting in Release 1.2, the initial value is DISABLE. <i>l4etclp</i> This parameter is available starting in Release 1.2. 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 <i>l4clim</i> and <i>l4cint</i>. Values: ■ DISABLE ■ ENABLE. The initial value is DISABLE. <i>l4clim</i> This parameter is available starting in Release 1.2. This parameter sets the TARP clipping limit. It specifies the maximum number of PDUs which can be forwarded in the interval <i>l4cint</i> seconds. Values: 10 - 2550 PDUs in 10 PDU increments. The initial value is 240 PDUs. <i>l4cint</i> This parameter is available starting in Release 1.2. This parameter sets the TARP clipping interval. Its value determines the time period in which the maximum number of PDUs, <i>l4clim</i>, can be forwarded before activating the clipping function. Values: 1 - 255 seconds in 1 second increments. The initial value is 12 seconds.

Table 3-179. RTRV-ULSDCC-L4 Output Parameters (cont 4 of 4)

Parameter Name	Description
	<i>l4et5gw</i> This parameter is available starting in Release 1.2. This parameter is used to enable or disable the TARP/X.500 gateway (T5GW) function. Values: ■ ENABLE ■ DISABLE. The initial value is DISABLE.
	<i>l4tme</i> This parameter is available starting in Release 1.2. This parameter sets the discovery timer, Timer E, which determines the frequency at which the T5GW invokes the discovery process. Values: 10 - 2550 minutes in 10-minute increments. The initial value is 20 minutes.
	<i>l4tmf</i> This parameter is available starting in Release 1.2. This parameter sets the anti-flooding timer, Timer F, which is used to prevent flooding the network with <i>type5</i> PDUs and their <i>type3</i> responses during the T5GW discovery process. Values: 1.0 - 60.0 seconds in 0.5-second increments. The initial value is 1 second.
	<i>l4wintm</i> This parameter is available starting in Release 3.1. This parameter sets the maximum time to wait before retransmitting window information, W. Values: 1 - 255 seconds in 1 second increments. The initial value is 16 seconds.
	<i>l4crdt</i> This parameter is available starting in Release 3.1. This parameter sets the transport credit parameter, the maximum number of outstanding unacknowledged transport PDUs allowed. Values: 1 - 15 PDUs in increments of 1 PDU. The initial value is 5 PDUs.

NAME

RTRV-USER: Retrieve User

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

- WaveStar BandWidth Manager, Release 1.3

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S1

Beginning with Release 3.0, 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 3-180. RTRV-USER Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>ctag</i>	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 3-181. RTRV-USER Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>uid</i>	User ID whose security parameters are to be retrieved. This parameter is available starting in Release 1.3. Values: Refer to the ACT-USER command.
<i>spec_block</i>	<i>upc</i> 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. <u>Note:</u> 'Di' is a Lucent-only category which can only be used with a special password. <i>uids</i> with Di as the <i>upc</i> 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. <i>uidclass</i> UID Class. This parameter is available starting in Release 2. This is the user class of a <i>uid</i>. Values: ■ MEMADMIN ■ OTHER ■ PARTITION.

Table 3-181. RTRV-USER Output Parameters (cont 2 of 3)

Parameter Name	Description
<i>ucpl</i>	Specifies User Community Priority Level (UCPL). This parameter is available starting in Release 1.3. Input commands from users with higher priority are executed before commands from users with lower priority. Values: Any integer ranging from 1 to 5.
<i>screen</i>	Message Screening. This parameter is available starting in Release 1.3. Specifies what output messages are associated with the <i>uid</i> . 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 <i>screen</i> values.
<i>page</i>	Password Aging Interval. This parameter is available starting in Release 3. 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.
<i>tmout</i>	Inactivity Timeout Period. This parameter is available starting in Release 3. 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. Values: 0 to 999 minutes.

Table 3-181. RTRV-USER Output Parameters (cont 3 of 3)

Parameter Name	Description
	<i>initobs</i> 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.

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 98-01-01 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S2

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 3-182. RTRV-USER-SECU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV-HDR command for the input parameter syntax and description of this parameter.
<i>uid</i>	Specifies the user ID. This parameter is available starting in Release 1. Values: See the ACT-USER command for a description of this parameter. If this parameter is omitted, all <i>uids</i> are retrieved
<i>ctag</i>	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 3-183. RTRV-USER-SECU Output Parameters (cont 1 of 3)

Parameter Name	Description
<i>uid</i>	User ID whose security parameters are to be retrieved. This parameter is available starting in Release 1. Values: Refer to the ACT-USER command.
<i>spec_block</i>	<i>upc</i> 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. <i>upc</i> Starting with Release 1.2, 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. <u>Note:</u> 'Di' is a Lucent-only category which can only be used with a special password. <i>uids</i> with Di as the <i>upc</i> 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.

Table 3-183. RTRV - USER - SECU Output Parameters (cont 2 of 3)

Parameter Name	Description
<i>ucpl</i>	Specifies User Community Priority Level (UCPL). This parameter is available starting in Release 1. Input commands from users with higher priority are executed before commands from users with lower priority. Values: ■ Any integer ranging from 1 to 5.
<i>screen</i>	Message Screening. Specifies what output messages are associated with the <i>uid</i> . 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 1.3, the value OWN is displayed if the screen parameter has none of the other <i>screen</i> values.
<i>page</i>	Password Aging Interval. This parameter is available starting in Release 3. 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.
<i>tmout</i>	Inactivity Timeout Period. This parameter is available starting in Release 3. 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.

Table 3-183. RTRV-USER-SECU Output Parameters (cont 3 of 3)

Parameter Name	Description
<i>alw_login</i>	Allow Login. This parameter is available starting in Release 3.1. This parameter displays the enable/disable state of a User ID. Values: ■ YES User ID is enabled. ■ NO User ID is disabled.
<i>uidclass</i>	UID Class. This parameter is available starting in Release 2. This is the user class of a <i>uid</i> . Values: ■ MEMADMIN The user is a memory administration operations system. If <i>uidclass</i> is set to MEMADMIN, the value of screen can only be set to NA. ■ OTHER This is the initial value.
<i>initobs</i>	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.

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 98-01-01 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 98-01-01 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

ENT-USER-SECU

ED-USER-SECU

DLT-USER-SECU

NAME

SET-ATTR-ALM: Set Attribute Alarm

The **SET-ATTR-ALM** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

SET-ATTR-ALM: *tid::ctag::[spec_block]*;

DESCRIPTION

SET-ATTR-ALM can be used to provision alarm delay and the alarm clear delay for two sets of alarms: facility alarm group (all communication notifications) and equipment alarm group (all equipment and processor error notifications). The groups can be provisioned independently. Alarm delay and clear times can be provisioned independently.

If a *spec_block* parameter is not specified, the **SET-ATTR-ALM** command returns **COMPLD**, and the parameters retain their previous values.

The **SET-ATTR-ALM** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-184. SET-ATTR-ALM Input Parameters (cont 1 of 2)

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

Table 3-184. SET-ATTR-ALM Input Parameters (cont 2 of 2)

Parameter Name	Description
<i>spec_block</i>	Specific Block. The <i>spec_block</i> and the parameters within it are all optional. This parameter field is used for modification of alarm attributes. Parameters within the <i>spec_block</i> are specified using a name defined construct of: PARAMETER=value in a comma separated list. The <i>spec_block</i> may contain none or more of the following parameters. <i>almdelfcft</i> 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 <i>almdelfcft</i> <= <i>clrdelfcft</i> <i>clrdelfcft</i> 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 <i>almdelegpt</i> 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 <i>almdelegpt</i> <= <i>clrdelfcft</i> AND <i>almdelegpt</i> <= <i>clrdelegpt</i> <i>clrdelegpt</i> 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

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::almdelfc1t=12,clrdelfc1t=12;  
  
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 apply to the **SET-ATTR-ALM** command.

RELATED TL1 MESSAGES

RTRV-ATTR-ALM

NAME

SET-SID: Set Target/Source Identification

The **SET-SID** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

1.

INPUT FORMAT

SET-SID: *tid::ctag::newsid*;

DESCRIPTION

SET-SID can be used to change the Target/Source identification of the network element. The **SET-SID** command is denied if the system is not in maintenance condition. Maintenance condition applies only to NE. For NCC, the command can be run without restriction, but will result in a system reset.

The **SET-SID** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-185. SET-SID Input Parameters (cont 1 of 2)

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to RTRV-HDR for input parameters syntax and description of this parameter.
<i>ctag</i>	Correlation Tag. Refer to RTRV-HDR for the input parameter syntax and description of this parameter.
<i>newsid</i>	Target/Source Identification. This is the new name of the network element. Future commands must use this name instead of the current name. That is, <i>newsid</i> replaces <i>tid</i> . For the NCC, changing this parameter will cause a system reset.

Table 3-185. SET -SID Input Parameters (cont 2 of 2)

Parameter Name	Description
	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 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 apply to the **SET -SID** command.

RELATED TL1 MESSAGES

None.

NAME

SET - SYCN: Set Synchronization

The **SET - SYCN** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M3

COMMAND PRIORITY

1.

INPUT FORMAT

SET - SYCN: *tid::ctag::[clkmod]:spec_block;*

DESCRIPTION

The **SET - SYCN** 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 - SYCN** command is used not only to establish system timing attributes but also to modify or remove them.

The **SET - SYCN** command generates a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-186. SET - SYCN Input Parameters and Input *spec_block* parameters for System Timing (cont 1 of 2)

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

Table 3-186. SET-SYCN Input Parameters and Input *spec_block* parameters for System Timing (cont 2 of 2)

Parameter Name	Description
<i>clkmod</i>	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 <i>clkmod</i> parameter is required to provision the system into free-running mode. Values: ■ FREE-RUNNING (initial value) ■ LOCKED.
<i>spec_block</i>	The following <i>spec_block</i> parameters are related to system timing. <i>wtr</i> Wait To Restore. For revertive switching, this is the amount of time it takes to switch from lower priority to higher priority references. Values: ■ 0 ■ 20SEC (initial value) ■ 1MIN ■ 2MIN...60MIN ■ 99 (infinite). <i>tcs1</i> This parameter defines the Cable 1 Timing Collection Source. Starting with Release 1.2, this parameter specifies shelf AIDs for line references for both line timing references and output references. The setting of shelf AID to 1-1 refers to the shelf to which the timing collection cable is attached. This should be the first installed I/O shelf. Also, the line timing references are constrained to ports on that shelf. Values: ■ NO-CONNECTION ■ shelf AID (initial value). Starting with Release 3.0, the use of <i>tcs1</i> parameter is discontinued:

Table 3-187. SET-SYCN Input *spec_block* Parameters for Assigned Timing Reference (cont 1 of 2)

Parameter Name	Description
<i>spec_block</i>	The following <i>spec_block</i> parameters are related to Assigned Timing Reference. <i>syncref_prov</i> 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. Starting with Release 1.2, this parameter can also have value: ■ LINE1. <i>tref_aid</i> Timing reference assigned port AID. This parameter is the designated port AID of the <i>syncref_prov</i> parameter. For multi-shelf system, the port AID must agree with the shelf AID in <i>tcs1</i>. Values: ■ EXTTMG0 (port AID of EXTREF1) ■ EXTTMG1 (port AID of EXTREF2) ■ NOT-CONNECTED (initial value). Starting with Release 1.2, this parameter can also have value: ■ port AID of LINE1. Starting with Release 3.1, the timing reference assigned port AID is the designated port AID of the <i>syncref_prov</i> parameter.

Table 3-187. SET-SYCN Input *spec_block* Parameters for Assigned Timing Reference (cont 2 of 2)

Parameter Name	Description
	<i>syncref_pri</i> System timing reference priority. This parameter defines the priorities for assigned references (<i>syncref_prov</i>). 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.

Table 3-188. SET-SYCN Input *spec_block* Parameters for Port Provisioning (cont 1 of 2)

Parameter Name	Description
<i>spec_block</i>	The following <i>spec_block</i> parameters are related to Port Provisioning: <i>tinpaid</i> Starting with Release 2, this parameter is for External timing Input Port AID. Values: ■ EXTTMG0 ■ EXTTMG1. <i>toutpaid</i> Starting with Release 2.0, this parameter is for External timing Output Port AID. Values: ■ EXTTMG0_OUT ■ EXTTMG1_OUT. <i>ds1_if</i> This parameter indicates the timing input format. Value: ■ ESF (initial value).

Table 3-188. SET-SYNCN Input *spec_block* Parameters for Port Provisioning (cont 2 of 2)

Parameter Name	Description
	<i>ext_if</i> Starting with Release 2.0, this parameter indicates the timing input format. Value: ■ ESF (initial value). Starting with Release 3.0, an additional value is supported. Value: ■ SF. <i>ext_of</i> Starting with Release 2.0, this parameter indicates the EXTREF timing output format. Values: ■ ESF (initial value) ■ SF. <i>extout_en</i> Starting with Release 3.0, this parameter enables or disables derived external timing output. Values: ■ ENABLE (initial value) ■ DISABLE. <i>ext_equ</i> Starting with Release 2, 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. <i>extout_prov</i> Starting with Release 2.0, this parameter connects or disconnects derived external output timing source selection. Values: ■ NO-CONNECTION (initial value) ■ LINE1.

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 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 apply to the **SET -SYNCN** command.

RELATED TL1 MESSAGES

RTRV -SYNCN

OPR -SYNCNSW

RLS -SYNCNSW

NAME

SND - TARP - PDU: Send Tarp PDU

The **SND - TARP - PDU** command is available beginning in:

- WaveStar BandWidth Manager, Release 1.2

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): S3

COMMAND PRIORITY

- 1.

INPUT FORMAT

SND - TARP - PDU: *tid:aid:ctag:::spec_block;*

DESCRIPTION

The **SND - TARP - PDU** command is used to manually generate TARP PDUs of types 1, 2, and 5. The **SND - TARP - PDU** command will send a Type 1 or Type 2 TARP PDU if the destination TID is specified or a Type 5 TARP PDU if the destination NSAP (NET) is specified. Either the destination TID or the destination NSAP must be specified, but not both. Since the **SND - TARP - PDU** command sends TARP PDUs, the *l4etof* parameter in the **ENT - ULSDCC - L4** command must be enabled.

In addition, the *duara* parameter in the **ED - NE** command must be disabled for the **SND - TARP - PDU** command to execute. Disabling this parameter will prevent the source TID from locating the TID/NET translation for the destination NE in the Directory Information Base of the SONET Directory Service. The **SND - TARP - PDU** command is required by Telcordia for laboratory testing and is not needed to install a new system.

The **SND - TARP - PDU** command does not generate a **REPT DBCHG** message.

INPUT PARAMETERS

Table 3-189. SND - TARP - PDU Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	Access Identifier. This parameter is available starting in Release 1.2. Value: datacom AID (DCC circuit pack AID). See the AID table in OSEG Appendix A.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>spec_block</i>	<i>desttid</i> The TID of the destination NE. This parameter is available starting in Release 1.2. If the <i>l4etof</i> parameter specified by the ENT - ULSDCC - L4 command is enabled and the <i>duara</i> parameter specified by the ED - NE command is disabled, a Type 1 PDU is sent to the destination TID. If there is no response, a Type 2 PDU is sent. If this parameter is specified, the <i>destnet</i> parameter must not be. <i>destnet</i> The NET of the destination NE. This parameter is available starting in Release 1.2. If the <i>l4etof</i> parameter specified by the ENT - ULSDCC - L4 command is enabled and the <i>duara</i> parameter specified by the ED - NE command is disabled, a Type 5 PDU is sent. If this parameter is specified, the <i>desttid</i> parameter must not be.

OUTPUT FORMAT

If the command completes successfully, then the following completion response is returned with the expected data:

```

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

```

If the command times out (after 2 seconds), then the following completion response is returned with no data:

```

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 **SND - TARP - PDU** command. Additional parameters that specifically apply to the **SND - TARP - PDU** command response are defined in the following table.

Table 3-190. SND - TARP - PDU Output Parameters

Parameter Name	Description
<i>spec_block</i>	<i>tidreply</i> This parameter is available starting in Release 1.2. This is the TID of the destination network element corresponding to the input parameter, <i>destnet</i>. <i>netreply</i> This parameter is available starting in Release 1.2. This is the NET of the destination network element corresponding to the input parameter, <i>desttid</i>.

The following example shows the successful completion of the **SND-TARP-PDU** command by the NE when the destination NSAP was specified in the command:

[illegible]

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

RTRV-ULSDCC-L4

NAME

TEST -ALM: Test Alarm

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

- WaveStar BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M1

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.

For a multishelf system such as WaveStar BandWidth Manager, 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.

For a single shelf system such as WaveStar Access Multiplexer, the office visual and audible alarms are controlled by that shelf. Also, the corresponding LEDs on the shelf's user panel are controlled during the test.

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 3-191. TEST -ALM Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	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.
<i>ctag</i>	Correlation Tag. Refer to the RTRV -HDR command for the input parameter syntax and description of this parameter.
<i>repeat</i>	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:

- CRITICAL, MAJOR, MINOR simultaneously off for 5 seconds
- 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
- 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 BandWidth Manager, Release 1.0

LOGIN PRIVILEGE

User Privilege Code (UCFC/UCAL): M2

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 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 3-192. TEST - LED Input Parameters

Parameter Name	Description
<i>tid</i>	Target Identifier. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>aid</i>	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 <i>aid</i> shall be omitted.
<i>ctag</i>	Correlation Tag. Refer to the RTRV - HDR command for the input parameter syntax and description of this parameter.
<i>repeat</i>	Number of times the test should repeat. It has the value: 1-60 . If this parameter is omitted, it is equivalent to setting <i>repeat</i> to 1.

When the *aid* indicates that LEDs for an I/O shelf are to be blinked, the LEDs in the SWIF sub-shelf will be blinked also.

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  
;
```

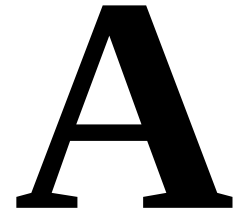
ERROR RESPONSES

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

BWM TL1 Parameter Tables



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Appendix Overview

Introduction

Appendix A contains the following types of WaveStar BWM parameters used by the TL1 commands/messages:

- External user access identifiers (AIDs) specified as input parameters
- SONET, SDH, and DS3 performance monitoring (PM) parameters
- SONET and SDH alarms/events condition description parameters
- SONET and SDH protection switching events parameters
- Password character parameters

AID Overview

Introduction

This appendix specifies the AID parameter details for the BWM 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 AID tables of Appendix A. These tables address 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

**NOTE:**

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:	canNOT 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 AIDs 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 Limits
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.

BWM AID Parameter Tables

Introduction

The following tables specify WaveStar BWM AID details for TL1 commands/messages.

System AIDs

Table A-3. External User AIDs for the System

Entity	Input AID	Output AID
System	system	system
ctlcpx0 controller complex side0 where, ctlcpx = {sys50d, ei, csiex}	ctlcpx0	ctlcpx0
ctlcpx1 controller complex side 1 where, ctlcpx = {sys50d, ei, csiex}	ctlcpx1	ctlcpx1
Byte Switch (BSW) Group	ebswgrp{01-16} ebswgrpall	ebswgrp{01-16}

Bay AIDs

Table A-4. External User AIDs for BWM Bays

Entity	Input AID	Output AID
System Controller Bay	sc all	sc
I/O Bay	{1-99} all	{1-99}
Switch Bay	sw{1-4} all	sw{1-4}

Shelf AIDs

Table A-5. External User AIDs for the BWM Shelves

Entity	Input AID	Output AID
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.
System Controller Shelf	sc-{1,all}	sc-1
I/O Shelf	{1-99}-{1-2, all}	{1-99}-{1-2}
Switch Shelf	sw{1-4}-{1,all}	sw{1-4}-1

**Protection Group
AIDs****Table A-6. External User AIDs for Protection Groups**

Entity	Input AID	Output AID
4F BLSR Facility Protection Group	{1-99}-{1-2}-f{01-99, all}	{1-99}-{1-2}-f{01-99}
2F BLSR Facility Protection Group	{1-99}-{1-2}-t{01-99, all}	{1-99}-{1-2}-t{01-99}
1+1 Facility Protection Group	{1-99}-{1-2}-o{01-99, all}	{1-99}-{1-2}-o{01-99}
1xN Equipment Protection Group (DS3EC1 Shelf)	{1-99}-{1-2}-eds3ec1grp	{1-99}-{1-2}-eds3ec1grp
1xN Equipment Protection Group (STM1EE4 Shelf)	{1-99}-{1-2}-estm1ee4grp	{1-99}-{1-2}-estm1ee4grp
1+1 Switch Equipment Protection Group (switch/576 plus the swifnn CPs for BWM)	{1-99}-{1-2}-eswitchgrp	{1-99}-{1-2}-eswitchgrp
1+1 System Controller Equipment Protection Group (protects: 1. sysctl0/1 on SC Shelf)	sc-1-esysctlgrp	sc-1-esysctlgrp
1+1 I/O Controller Equipment Protection Group (protects: 1. ctlmem0/1 on 2.5G (DS3EC1) I/O Shelf 2. ctlmem0/1 on 10G Shelf)	{1-99}-{1-2}-esysctlgrp	{1-99}-{1-2}-esysctlgrp
1+1 Timing Equipment Protection Group System Controller Shelf	sc-1-etmggrp	sc-1-etmggrp
1+1 Timing Equipment Protection Group Switch Shelf	sw{1-4}-1-etmggrp	sw{1-4}-1-etmggrp
1+1 Timing Equipment Protection Group I/O Shelves	{1-99}-{1-2}-etmggrp	{1-99}-{1-2}-etmggrp
1+1 DCC Equipment Protection Group (DCC and DCCEI)	{1-99}-{1-2}-edccgrp	{1-99}-{1-2}-edccgrp
1+1 System Controller Mem Group (on SC Shelf)	sc -1 -ememgrp	sc -1 -ememgrp

These notes apply to the following table:

Note: {e,w} denotes the East side or West side.

Note: {w,p} denotes the Working side or the Protection side.

Sides/Lines AIDs

Table A-7. External User AIDs for Sides/Lines (1 of 2)

Entity	Input AID	Output AID
4F BLSR Facility Protection Group East/West Side	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}
2F BLSR Facility Protection Group East/West Side	{1-99}-{1-2}-t{01-99}-{e,w}	{1-99}-{1-2}-t{01-99}-{e,w}
Optical 1+1 Protection Group Working/Protection Line	{1-99}-{1-2}-o{01-99}-{w,p}	{1-99}-{1-2}-o{01-99}-{w,p}
1xN Equipment Protection Group (DS3EC1 Shelf) Working/Protection Lines	{1-99}-{1-2}-eds3ec1grp-{w,p}	{1-99}-{1-2}-eds3ec1grp-{w,p}
1xN Equipment Protection Group (STM1EE4 Shelf) Working/Protection Lines	{1-99}-{1-2}-estm1ee4grp-{w,p}	{1-99}-{1-2}-estm1ee4grp-{w,p}
1+1 Switch Equipment Protection Group (switch/576 plus the swifmn CPs for BWM) Working/Protection Lines	{1-99}-{1-2}-eswitchgrp-{w,p}	{1-99}-{1-2}-eswitchgrp-{w,p}
BWM 1+1 System Controller Equipment Protection Group (protects: 1. sysctl0/1 on SC Shelf Working/Protection Lines	sc-1-esysctlgrp-{w,p}	sc-1-esysctlgrp-{w,p}
BWM 1+1 System Controller Equipment Protection Group (protects: 1. ctlmem0/1 on 2.5G (DS3EC1) I/O Shelf 2. ctlmem0/1 on 10G Shelf) Working/Protection Lines	{1-99}-{1-2}-esysctlgrp-{w,p}	{1-99}-{1-2}-esysctlgrp-{w,p}
1+1 Timing Equipment Protection Group Working/Protection Lines System Controller Shelf	sc-1-etmggrp-{w,p}	sc-1-etmggrp-{w,p}

Table A-7. External User AIDs for Sides/Lines (2 of 2)

Entity	Input AID	Output AID
1+1 Timing Equipment Protection Group Working/Protection Lines Switch Shelf	sw{1-4}-1-etmggrp-{w,p}	sw{1-4}-1-etmggrp-{w,p}
BWM 1+1 Timing Equipment Protection Group Working/Protection Lines OSWIF Shelf	sw{1-4}-{1,3}-etmggrp-{w,p}	sw{1-4}-{1,3}-etmggrp-{w,p}
BWM 1+1 Timing Equipment Protection Group Working/Protection Lines I/O Shelves	{1-99}-{1-2}-etmggrp-{w,p}	{1-99}-{1-2}-etmggrp-{w,p}
BWM 1+1 DCC Equipment Protection Group (DCC and DCCEI) Working/Protection Lines	{1-99}-{1-2}-edccgrp-{w,p}	{1-99}-{1-2}-edccgrp-{w,p}
BWM 1+1 System Controller Mem Group (on SC Shelf) Working/Protection Lines	sc -1 -ememgrp-{w,p}	sc -1 -ememgrp-{w,p}

**System Controller
Slot Names Figure**

Figure A-1 shows the slot names for the BWM System Controller (SC) Shelf. For more information see Table A-8.

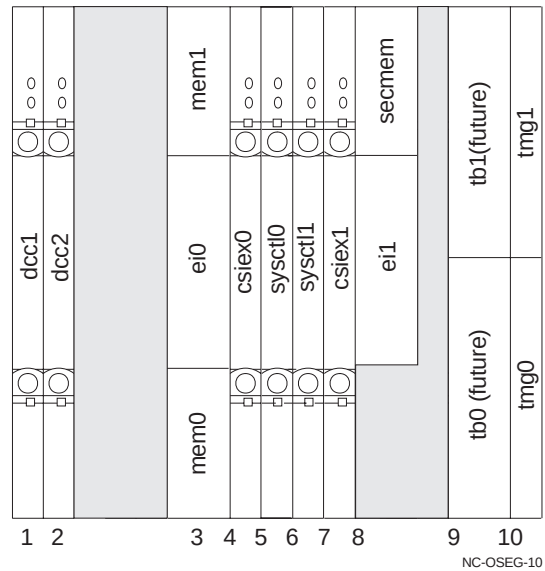


Figure A-1. Slot Names in the BWM System Controller (SC) Shelf

**System Controller
Slot AIDs**

Table A-8. External User AIDs for Slots in the System Controller (SC) Shelf (1 of 2)

Entity	Input AID	Output AID
SC all slots	sc-1-#-#-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.
SC dcc1 slot	sc -1 -# -# -dcc1	sc -1 -# -# -dcc1
SC dcc2 slot	sc -1 -# -# -dcc2	sc -1 -# -# -dcc2
SC Shelf mem0 slot	sc -1 -# -# -mem0	sc -1 -# -# -mem0
SC Shelf mem1 slot	sc -1 -# -# -mem1	sc -1 -# -# -mem1
SC Shelf ei0 slot	sc -1 -# -# -ei0	sc -1 -# -# -ei0

Table A-8. External User AIDs for Slots in the System Controller (SC) Shelf (2 of 2)

Entity	Input AID	Output AID
SC Shelf csiex0 slot	sc -1 -# -# -csiex0	sc -1 -# -# -csiex0
SC Shelf sysctl0 slot	sc -1 -# -# -sysctl0	sc -1 -# -# -sysctl0
SC Shelf sysctl1 slot	sc -1 -# -# -sysctl1	sc -1 -# -# -sysctl1
SC Shelf csiex1 slot	sc -1 -# -# -csiex1	sc -1 -# -# -csiex1
SC Shelf ei1 slot	sc -1 -# -# -ei1	sc -1 -# -# -ei1
SC Shelf secmem slot	sc -1 -# -# -secmem	sc -1 -# -# -secmem
SC Shelf tmg0 slot	sc -1 -# -# -tmg0	sc -1 -# -# -tmg0
SC Shelf tmg1 slot	sc -1 -# -# -tmg1	sc -1 -# -# -tmg1

**BWM 2.5G I/O
Shelf Slot Names
Figure**

Figure A-2 shows the slot names for both the BWM 2.5G:

- (DS3/EC1) I/O Shelf, and
- (STM1EE4) I/O shelf.

For more information on the BWM 2.5G (DS3/EC1 and STM1EE4) slot AIDs see Table A-9.

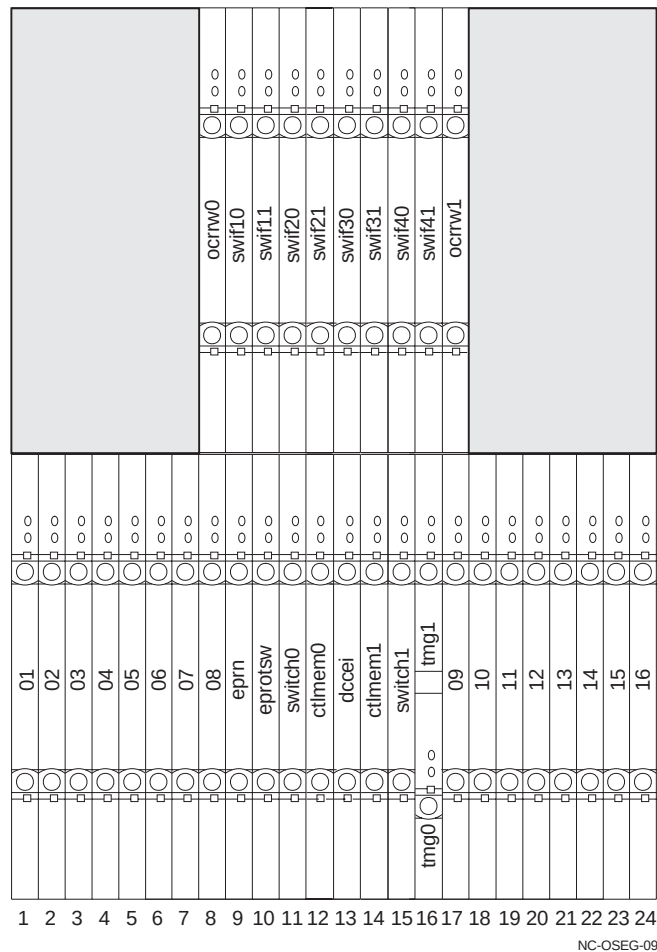


Figure A-2. Slot Names in the BWM 2.5G I/O Shelf - (DS3/EC1 and STM1EE4)

**BWM 2.5G I/O
Shelf Slot AIDs****Table A-9. External User AIDs for Slots in the BWM 2.5G (DS3/EC1 and STM1EE4) I/O Shelf (1 of 3)**

Entity	Input AID	Output AID
I/O Any Shelf All slots on the shelf	{1-99}-{1-2}-##-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.
2.5G (DS3EC1) I/O Shelf Port card slot	{1-99}-{1-2}-##-{01-16}	{1-99}-{1-2}-##-{01-16}
2.5G (DS3EC1) I/O Shelf ds3/ec1 slot	{1-99}-{1-2}-##-{01-06, 11-16}	{1-99}-{1-2}-##-{01-06, 11-16}
2.5G (DS3EC1) I/O Shelf oc3 slot	{1-99}-{1-2}-##-{01-16}	{1-99}-{1-2}-##-{01-16}
2.5G (DS3EC1) I/O Shelf oc12 slot	{1-99}-{1-2}-##-{01-16}	{1-99}-{1-2}-##-{01-16}
2.5G (DS3EC1) I/O Shelf oc48 slot	{1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}	{1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}
2.5G (DS3EC1) I/O Shelf electrical protection pack slot	{1-99}-{1-2}-##-eprn	{1-99}-{1-2}-##-eprn
2.5G (DS3EC1) I/O Shelf electrical protection switch pack slot	{1-99}-{1-2}-##-eprotsw	{1-99}-{1-2}-##-eprotsw
2.5G (DS3EC1) I/O Shelf (576) switch0 slot	{1-99}-{1-2}-##-switch0	{1-99}-{1-2}-##-switch0
2.5G (DS3EC1) I/O Shelf ctlmem0 slot (slot for subrack controller)	{1-99}-{1-2}-##-ctlmem0	{1-99}-{1-2}-##-ctlmem0
2.5G (DS3EC1) I/O Shelf dccei slot	{1-99}-{1-2}-##-dccei	{1-99}-{1-2}-##-dccei
2.5G (DS3EC1) I/O Shelf ctlmem1 slot (slot for subrack controller)	{1-99}-{1-2}-##-ctlmem1	{1-99}-{1-2}-##-ctlmem1
2.5G (DS3EC1) I/O Shelf (576) switch1 slot	{1-99}-{1-2}-##-switch1	{1-99}-{1-2}-##-switch1
2.5G (DS3EC1) I/O Shelf tmg0 slot	{1-99}-{1-2}-##-tmg0	{1-99}-{1-2}-##-tmg0
2.5G (DS3EC1) I/O Shelf tmg1 slot	{1-99}-{1-2}-##-tmg1	{1-99}-{1-2}-##-tmg1

Table A-9. External User AIDs for Slots in the BWM 2.5G (DS3/EC1 and STM1EE4) I/O Shelf (2 of 3)

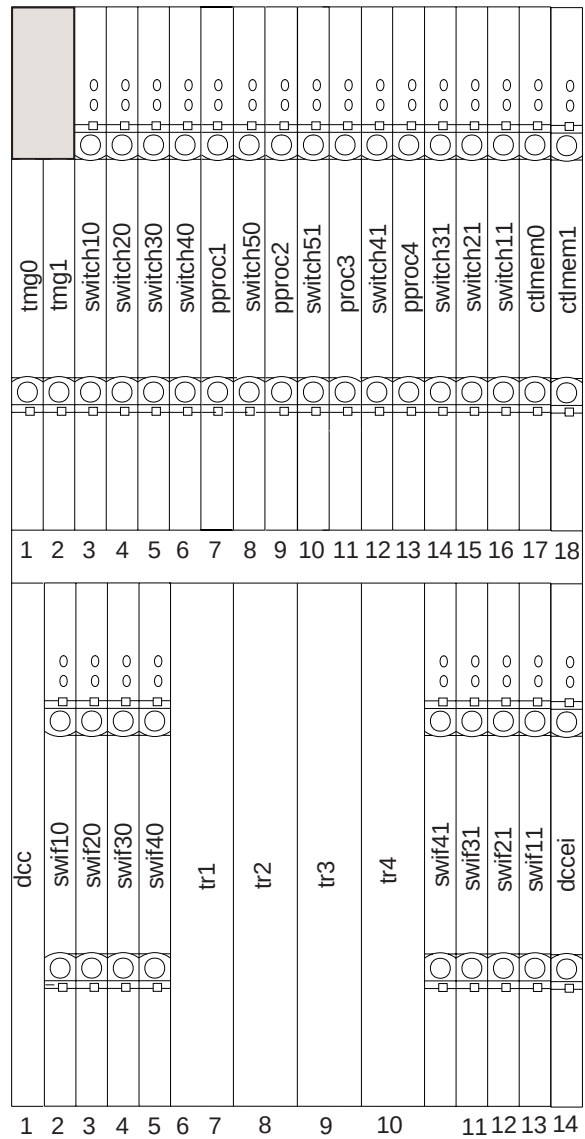
Entity	Input AID	Output AID
2.5G (DS3/EC1) I/O Shelf ocrrw0 slot	{1-99}-{1-2}-##-ocrrw0	{1-99}-{1-2}-##-ocrrw0
2.5G (DS3/EC1) I/O Shelf swif10 slot	{1-99}-{1-2}-##-swif10	{1-99}-{1-2}-##-swif10
2.5G (DS3/EC1) I/O Shelf swif11 slot	{1-99}-{1-2}-##-swif11	{1-99}-{1-2}-##-swif11
2.5G (DS3/EC1) I/O Shelf swif20 slot	{1-99}-{1-2}-##-swif20	{1-99}-{1-2}-##-swif20
2.5G (DS3/EC1) I/O Shelf swif21 slot	{1-99}-{1-2}-##-swif21	{1-99}-{1-2}-##-swif21
2.5G (DS3/EC1) I/O Shelf swif30 slot	{1-99}-{1-2}-##-swif30	{1-99}-{1-2}-##-swif30
2.5G (DS3/EC1) I/O Shelf swif31 slot	{1-99}-{1-2}-##-swif31	{1-99}-{1-2}-##-swif31
2.5G (DS3/EC1) I/O Shelf swif40 slot	{1-99}-{1-2}-##-swif40	{1-99}-{1-2}-##-swif40
2.5G (DS3/EC1) I/O Shelf swif41 slot	{1-99}-{1-2}-##-swif41	{1-99}-{1-2}-##-swif41
2.5G (DS3/EC1) I/O Shelf ocrrw1 slot	{1-99}-{1-2}-##-ocrrw1	{1-99}-{1-2}-##-ocrrw1
2.5G (STM1EE4) I/O Shelf Port card slot	{1-99}-{1-2}-##-{01-16}	{1-99}-{1-2}-##-{01-16}
2.5G (STM1EE4) I/O Shelf stm1ee4 slot	{1-99}-{1-2}-##-{01-06, 11-16}	{1-99}-{1-2}-##-{01-06, 11-16}
2.5G (STM1EE4) I/O Shelf oc3 slot	{1-99}-{1-2}-##-{01-16}	{1-99}-{1-2}-##-{01-16}
2.5G (STM1EE4) I/O Shelf oc12 slot	{1-99}-{1-2}-##-{01-16}	{1-99}-{1-2}-##-{01-16}
2.5G (STM1EE4) I/O Shelf oc48 slot	{1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}	{1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}
2.5G (STM1EE4) I/O Shelf electrical protection pack slot	{1-99}-{1-2}-##-eprn	{1-99}-{1-2}-##-eprn
2.5G (STM1EE4) I/O Shelf electrical protection switch pack slot	{1-99}-{1-2}-##-eprotsw	{1-99}-{1-2}-##-eprotsw
2.5G (STM1EE4) I/O Shelf (576) switch0 slot	{1-99}-{1-2}-##-switch0	{1-99}-{1-2}-##-switch0

Table A-9. External User AIDs for Slots in the BWM 2.5G (DS3/EC1 and STM1EE4) I/O Shelf (3 of 3)

Entity	Input AID	Output AID
2.5G (STM1EE4) I/O Shelf ctlmem0 slot (slot for subrack controller)	{1-99}-{1-2}-##-ctlmem0	{1-99}-{1-2}-##-ctlmem0
2.5G (STM1EE4) I/O Shelf dccei slot	{1-99}-{1-2}-##-dccei	{1-99}-{1-2}-##-dccei
2.5G (STM1EE4) I/O Shelf ctlmem1 slot (slot for subrack controller)	{1-99}-{1-2}-##-ctlmem1	{1-99}-{1-2}-##-ctlmem1
2.5G (STM1EE4) I/O Shelf (576) switch1 slot	{1-99}-{1-2}-##-switch1	{1-99}-{1-2}-##-switch1
2.5G (STM1EE4) I/O Shelf tmg0 slot	{1-99}-{1-2}-##-tmg0	{1-99}-{1-2}-##-tmg0
2.5G (STM1EE4) I/O Shelf tmg1 slot	{1-99}-{1-2}-##-tmg1	{1-99}-{1-2}-##-tmg1
2.5G (STM1EE4) I/O Shelf ocrrw0 slot	{1-99}-{1-2}-##-ocrrw0	{1-99}-{1-2}-##-ocrrw0
2.5G (STM1EE4) I/O Shelf swif10 slot	{1-99}-{1-2}-##-swif10	{1-99}-{1-2}-##-swif10
2.5G (STM1EE4) I/O Shelf swif11 slot	{1-99}-{1-2}-##-swif11	{1-99}-{1-2}-##-swif11
2.5G (STM1EE4) I/O Shelf swif20 slot	{1-99}-{1-2}-##-swif20	{1-99}-{1-2}-##-swif20
2.5G (STM1EE4) I/O Shelf swif21 slot	{1-99}-{1-2}-##-swif21	{1-99}-{1-2}-##-swif21
2.5G (STM1EE4) I/O Shelf swif30 slot	{1-99}-{1-2}-##-swif30	{1-99}-{1-2}-##-swif30
2.5G (STM1EE4) I/O Shelf swif31 slot	{1-99}-{1-2}-##-swif31	{1-99}-{1-2}-##-swif31
2.5G (STM1EE4) I/O Shelf swif40 slot	{1-99}-{1-2}-##-swif40	{1-99}-{1-2}-##-swif40
2.5G (STM1EE4) I/O Shelf swif41 slot	{1-99}-{1-2}-##-swif41	{1-99}-{1-2}-##-swif41
2.5G (STM1EE4) I/O Shelf ocrrw1 slot	{1-99}-{1-2}-##-ocrrw1	{1-99}-{1-2}-##-ocrrw1

**BWM 10G
(OC-192) Shelf Slot
Names Figure**

Figure A-3 shows the slot names for the BWM 10G (OC-192) Shelf. For more information see Table A-10.



NC-OSEG-17

Figure A-3. Slot Names in the BWM 10G (OC-192) Shelf

**BWM 10G
(OC-192) Shelf Slot
Names****Table A-10. External User AIDs for Slots in the BWM 10G (OC-192) Shelf (1 of 2)**

Entity	Input AID	Output AID
10G Shelf dcc slot	{1-99}-{1-2}-##-dcc	{1-99}-{1-2}-##-dcc
10G Shelf swif 10 slot	{1-99}-{1-2}-##-swif10	{1-99}-{1-2}-##-swif10
10G Shelf swif 20 slot	{1-99}-{1-2}-##-swif20	{1-99}-{1-2}-##-swif20
10G Shelf swif 30 slot	{1-99}-{1-2}-##-swif30	{1-99}-{1-2}-##-swif30
10G Shelf swif 40 slot	{1-99}-{1-2}-##-swif40	{1-99}-{1-2}-##-swif40
10G Shelf tr1 slot	{1-99}-{1-2}-##-tr1	{1-99}-{1-2}-##-tr1
10G Shelf tr2 slot	{1-99}-{1-2}-##-tr2	{1-99}-{1-2}-##-tr2
10G Shelf tr3 slot	{1-99}-{1-2}-##-tr3	{1-99}-{1-2}-##-tr3
10G Shelf tr4 slot	{1-99}-{1-2}-##-tr4	{1-99}-{1-2}-##-tr4
10G Shelf swif 41 slot	{1-99}-{1-2}-##-swif41	{1-99}-{1-2}-##-swif41
10G Shelf swif 31 slot	{1-99}-{1-2}-##-swif31	{1-99}-{1-2}-##-swif31
10G Shelf swif 21 slot	{1-99}-{1-2}-##-swif21	{1-99}-{1-2}-##-swif21
10G Shelf swif 11 slot	{1-99}-{1-2}-##-swif11	{1-99}-{1-2}-##-swif11
10G Shelf dccei slot	{1-99}-{1-2}-##-dccei	{1-99}-{1-2}-##-dccei
10G Shelf tmg0 slot	{1-99}-{1-2}-##-tmg0	{1-99}-{1-2}-##-tmg0
10G Shelf tmg1 slot	{1-99}-{1-2}-##-tmg1	{1-99}-{1-2}-##-tmg1
10G Shelf switch 10 slot	{1-99}-{1-2}-##-switch10	{1-99}-{1-2}-##-switch10
10G Shelf switch 20 slot	{1-99}-{1-2}-##-switch20	{1-99}-{1-2}-##-switch20

Table A-10. External User AIDs for Slots in the BWM 10G (OC-192) Shelf (2 of 2)

10G Shelf switch 30 slot	{1-99}-{1-2}-##-switch30	{1-99}-{1-2}-##-switch30
10G Shelf switch 40 slot	{1-99}-{1-2}-##-switch40	{1-99}-{1-2}-##-switch40
10G Shelf pproc1 slot	{1-99}-{1-2}-##-pproc1	{1-99}-{1-2}-##-pproc1
10G Shelf switch 50 slot	{1-99}-{1-2}-##-switch50	{1-99}-{1-2}-##-switch50
10G Shelf pproc2 slot	{1-99}-{1-2}-##-pproc2	{1-99}-{1-2}-##-pproc2
10G Shelf switch 51 slot	{1-99}-{1-2}-##-switch51	{1-99}-{1-2}-##-switch51
10G Shelf pproc3 slot	{1-99}-{1-2}-##-pproc3	{1-99}-{1-2}-##-pproc3
10G Shelf switch 41 slot	{1-99}-{1-2}-##-switch41	{1-99}-{1-2}-##-switch41
10G Shelf pproc4 slot	{1-99}-{1-2}-##-pproc4	{1-99}-{1-2}-##-pproc4
10G Shelf switch 31 slot	{1-99}-{1-2}-##-switch31	{1-99}-{1-2}-##-switch31
10G Shelf switch 21 slot	{1-99}-{1-2}-##-switch21	{1-99}-{1-2}-##-switch21
10G Shelf switch 11 slot	{1-99}-{1-2}-##-switch11	{1-99}-{1-2}-##-switch11
10G Shelf ctlmem0 slot	{1-99}-{1-2}-##-ctlmem0	{1-99}-{1-2}-##-ctlmem0
10G Shelf ctlmem1 slot	{1-99}-{1-2}-##-ctlmem1	{1-99}-{1-2}-##-ctlmem1
10G Shelf pproc2 slot	{1-99}-{1-2}-##-pproc2	{1-99}-{1-2}-##-pproc2

**BWM Switch Shelf
Slot Names Figure**

Figure A-4 shows the slot names for the BWM Switch (SW) Shelf. For more information see Table A-11.

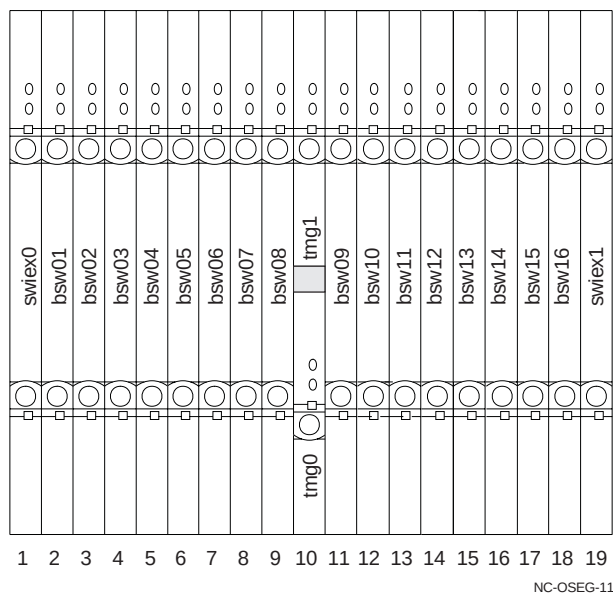


Figure A-4. Slot Names in the BWM Switch (SW) Shelf

**Switch Shelf Slot
AIDs**

Table A-11. External User AIDs for Slots in the Switch (SW) Shelf

Entity	Input AID	Output AID
Switch Shelf All slots on the shelf	sw{1-4} -1 -# -# -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.
SW Shelf swiex0 slot	sw{1-4} -1 -# -# -swiex0	sw{1-4} -1 -# -# -swiex0
SW Shelf bsw01 - bsw16 slot	sw{1-4} -1 -# -# -bsw{01 -16}	sw{1-4} -1 -# -# -bsw{01 -16}
SW Shelf tmg0 slot	sw{1-4} -1 -# -# -tmg0	sw{1-4} -1 -# -# -tmg0
SW Shelf tmg1 slot	sw{1-4} -1 -# -# -tmg1	sw{1-4} -1 -# -# -tmg1
SW Shelf swiex1 slot	sw{1-4} -1 -# -# -swiex1	sw{1-4} -1 -# -# -swiex1

**System Controller
Shelf Circuit Pack
AIDs****Table A-12. External User AIDs for Circuit Packs in the System Controller Shelf**

Entity	Input AID	Output AID
SC Shelf All of the circuit packs on the shelf	sc-1-#-#-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.
SC Shelf dcc1 unit	sc-1-#-#-dcc1-cp	sc-1-#-#-dcc1-cp
SC Shelf dcc2 unit	sc-1-#-#-dcc2-cp	sc-1-#-#-dcc2-cp
SC Shelf MEM0 pack (PCMCIA card for flash memory 0)	sc-1-#-#-mem0-cp	sc-1-#-#-mem0-cp
SC Shelf ei0 unit	sc-1-#-#-ei0-cp	sc-1-#-#-ei0-cp
SC Shelf MEM1 pack (PCMCIA card for flash memory 1)	sc-1-#-#-mem1-cp	sc-1-#-#-mem1-cp
SC Shelf csiex0 unit	sc-1-#-#-csiex0-cp	sc-1-#-#-csiex0-cp
SC Shelf sysctl0 unit	sc-1-#-#-sysctl0-cp	sc-1-#-#-sysctl0-cp
SC Shelf sysctl1 unit	sc-1-#-#-sysctl1-cp	sc-1-#-#-sysctl1-cp
SC Shelf csiex1 unit	sc-1-#-#-csiex1-cp	sc-1-#-#-csiex1-cp
SC Shelf ei1 unit	sc-1-#-#-ei1-cp	sc-1-#-#-ei1-cp
SC Shelf secmem unit	sc-1-#-#-secmem-cp	sc-1-#-#-secmem-cp
SC Shelf tmg0 unit	sc-1-#-#-tmg0-cp	sc-1-#-#-tmg0-cp
SC Shelf tmg1 unit	sc-1-#-#-tmg1-cp	sc-1-#-#-tmg1-cp

**BWM 2.5G I/O
Shelf Circuit Pack
AIDs****Table A-13. External User AIDs for Circuit Packs in the BWM 2.5G (DS3/EC1 and STM1EE4) I/O Shelf (1 of 3)**

Entity	Input AID	Output AID
I/O Shelf All of the circuit packs on any I/O shelf	{1-99}-{1-2}-##-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.
2.5G (DS3EC1) I/O Shelf Port unit circuit pack	{1-99}-{1-2}-##-{01-16}-cp	{1-99}-{1-2}-##-{01-16}-cp
2.5G (DS3EC1) I/O Shelf Electrical Protection unit	{1-99}-{1-2}-##-eprn-cp	{1-99}-{1-2}-##-eprn-cp
2.5G (DS3EC1) I/O Shelf Electrical Protection Switch unit	{1-99}-{1-2}-##-eprotsw-cp	{1-99}-{1-2}-##-eprotsw-cp
2.5G (DS3EC1) I/O Shelf (576) switch0 unit	{1-99}-{1-2}-##-switch0-cp	{1-99}-{1-2}-##-switch0-cp
2.5G (DS3EC1) I/O Shelf ctlmem0 unit (SYS50DM)	{1-99}-{1-2}-##-ctlmem0-cp	{1-99}-{1-2}-##-ctlmem0-cp
2.5G (DS3EC1) I/O Shelf dccei unit	{1-99}-{1-2}-##-dccei-cp	{1-99}-{1-2}-##-dccei-cp
2.5G (DS3EC1) I/O Shelf ctlmem1 unit (SYS50DM1)	{1-99}-{1-2}-##-ctlmem1-cp	{1-99}-{1-2}-##-ctlmem1-cp
2.5G (DS3EC1) I/O Shelf (576) switch1 unit	{1-99}-{1-2}-##-switch1-cp	{1-99}-{1-2}-##-switch1-cp
2.5G (DS3EC1) I/O Shelf tmg0 unit	{1-99}-{1-2}-##-tmg0-cp	{1-99}-{1-2}-##-tmg0-cp
2.5G (DS3EC1) I/O Shelf tmg1 unit	{1-99}-{1-2}-##-tmg1-cp	{1-99}-{1-2}-##-tmg1-cp
2.5G (DS3EC1) I/O Shelf ocrw0 unit	{1-99}-{1-2}-##-ocrw0-cp	{1-99}-{1-2}-##-ocrw0-cp
2.5G (DS3EC1) I/O Shelf swif10 unit	{1-99}-{1-2}-##-swif10-cp	{1-99}-{1-2}-##-swif10-cp
2.5G (DS3EC1) I/O Shelf swif11 unit	{1-99}-{1-2}-##-swif11-cp	{1-99}-{1-2}-##-swif11-cp
2.5G (DS3EC1) I/O Shelf swif20 unit	{1-99}-{1-2}-##-swif20-cp	{1-99}-{1-2}-##-swif20-cp

Table A-13. External User AIDs for Circuit Packs in the BWM 2.5G (DS3/EC1 and STM1EE4) I/O Shelf (2 of 3)

2.5G (DS3EC1) I/O Shelf swif21 unit	{1-99}-{1-2}-##-swif21-cp	{1-99}-{1-2}-##-swif21-cp
2.5G (DS3EC1) I/O Shelf swif30 unit	{1-99}-{1-2}-##-swif30-cp	{1-99}-{1-2}-##-swif30-cp
2.5G (DS3EC1) I/O Shelf swif31 unit	{1-99}-{1-2}-##-swif31-cp	{1-99}-{1-2}-##-swif31-cp
2.5G (DS3EC1) I/O Shelf swif40 unit	{1-99}-{1-2}-##-swif40-cp	{1-99}-{1-2}-##-swif40-cp
2.5G (DS3EC1) I/O Shelf swif41 unit	{1-99}-{1-2}-##-swif41-cp	{1-99}-{1-2}-##-swif41-cp
2.5G (DS3EC1) I/O Shelf ocrrw1 unit	{1-99}-{1-2}-##-ocrrw1-cp	{1-99}-{1-2}-##-ocrrw1-cp
2.5G (STM1EE4) I/O Shelf Port unit circuit pack	{1-99}-{1-2}-##-{01-16}-cp	{1-99}-{1-2}-##-{01-16}-cp
2.5G (STM1EE4) I/O Shelf Electrical Protection unit	{1-99}-{1-2}-##-eprn-cp	{1-99}-{1-2}-##-eprn-cp
2.5G (STM1EE4) I/O Shelf Electrical Protection Switch unit	{1-99}-{1-2}-##-eprotsw-cp	{1-99}-{1-2}-##-eprotsw-cp
2.5G (STM1EE4) I/O Shelf (576) switch0 unit	{1-99}-{1-2}-##-switch0-cp	{1-99}-{1-2}-##-switch0-cp
2.5G (STM1EE4) I/O Shelf ctlmem0 unit (SYS50DM)	{1-99}-{1-2}-##-ctlmem0-cp	{1-99}-{1-2}-##-ctlmem0-cp
2.5G (STM1EE4) I/O Shelf dccei unit	{1-99}-{1-2}-##-dccei-cp	{1-99}-{1-2}-##-dccei-cp
2.5G (STM1EE4) I/O Shelf ctlmem1 unit (SYS50DM1)	{1-99}-{1-2}-##-ctlmem1-cp	{1-99}-{1-2}-##-ctlmem1-cp
2.5G (STM1EE4) I/O Shelf (576) switch1 unit	{1-99}-{1-2}-##-switch1-cp	{1-99}-{1-2}-##-switch1-cp
2.5G (STM1EE4) I/O Shelf tmg0 unit	{1-99}-{1-2}-##-tmg0-cp	{1-99}-{1-2}-##-tmg0-cp

Table A-13. External User AIDs for Circuit Packs in the BWM 2.5G (DS3/EC1 and STM1EE4) I/O Shelf (3 of 3)

2.5G (STM1EE4) I/O Shelf tmg1 unit	{1-99}-{1-2}-##-tmg1-cp	{1-99}-{1-2}-##-tmg1-cp
2.5G (STM1EE4) I/O Shelf ocrrw0 unit	{1-99}-{1-2}-##-ocrrw0-cp	{1-99}-{1-2}-##-ocrrw0-cp
2.5G (STM1EE4) I/O Shelf swif10 unit	{1-99}-{1-2}-##-swif10-cp	{1-99}-{1-2}-##-swif10-cp
2.5G (STM1EE4) I/O Shelf swif11 unit	{1-99}-{1-2}-##-swif11-cp	{1-99}-{1-2}-##-swif11-cp
2.5G (STM1EE4) I/O Shelf swif20 unit	{1-99}-{1-2}-##-swif20-cp	{1-99}-{1-2}-##-swif20-cp
2.5G (STM1EE4) I/O Shelf swif21 unit	{1-99}-{1-2}-##-swif21-cp	{1-99}-{1-2}-##-swif21-cp
2.5G (STM1EE4) I/O Shelf swif30 unit	{1-99}-{1-2}-##-swif30-cp	{1-99}-{1-2}-##-swif30-cp
2.5G (STM1EE4) I/O Shelf swif31 unit	{1-99}-{1-2}-##-swif31-cp	{1-99}-{1-2}-##-swif31-cp
2.5G (STM1EE4) I/O Shelf swif40 unit	{1-99}-{1-2}-##-swif40-cp	{1-99}-{1-2}-##-swif40-cp
2.5G (STM1EE4) I/O Shelf swif41 unit	{1-99}-{1-2}-##-swif41-cp	{1-99}-{1-2}-##-swif41-cp
2.5G (STM1EE4) I/O Shelf ocrrw1 unit	{1-99}-{1-2}-##-ocrrw1-cp	{1-99}-{1-2}-##-ocrrw1-cp

**BWM 10G
(OC-192) Shelf
Circuit Pack AIDs****Table A-14. External User AIDs for Circuit Packs in the BWM 10G (OC-192) Shelf
(1 of 2)**

Entity	Input AID	Output AID
10G Shelf dcc unit	{1-99}-{1-2}-##-dcc-cp	{1-99}-{1-2}-##-dcc-cp
10G Shelf swif 10 unit	{1-99}-{1-2}-##-swif10-cp	{1-99}-{1-2}-##-swif10-cp
10G Shelf swif 20 unit	{1-99}-{1-2}-##-swif20-cp	{1-99}-{1-2}-##-swif20-cp
10G Shelf swif 30 unit	{1-99}-{1-2}-##-swif30-cp	{1-99}-{1-2}-##-swif30-cp
10G Shelf swif 40 unit	{1-99}-{1-2}-##-swif40-cp	{1-99}-{1-2}-##-swif40-cp
10G Shelf tr1 unit	{1-99}-{1-2}-##-tr1-cp	{1-99}-{1-2}-##-tr1-cp
10G Shelf tr2 unit	{1-99}-{1-2}-##-tr2-cp	{1-99}-{1-2}-##-tr2-cp
10G Shelf tr3 unit	{1-99}-{1-2}-##-tr3-cp	{1-99}-{1-2}-##-tr3-cp
10G Shelf tr4 unit	{1-99}-{1-2}-##-tr4-cp	{1-99}-{1-2}-##-tr4-cp
10G Shelf swif 41 unit	{1-99}-{1-2}-##-swif41-cp	{1-99}-{1-2}-##-swif41-cp
10G Shelf swif 31 unit	{1-99}-{1-2}-##-swif31-cp	{1-99}-{1-2}-##-swif31-cp
10G Shelf swif 21 unit	{1-99}-{1-2}-##-swif21-cp	{1-99}-{1-2}-##-swif21-cp
10G Shelf swif 11 unit	{1-99}-{1-2}-##-swif11-cp	{1-99}-{1-2}-##-swif11-cp
10G Shelf dccei unit	{1-99}-{1-2}-##-dccei-cp	{1-99}-{1-2}-##-dccei-cp
10G Shelf tmg0 unit	{1-99}-{1-2}-##-tmg0-cp	{1-99}-{1-2}-##-tmg0-cp
10G Shelf tmg1 unit	{1-99}-{1-2}-##-tmg1-cp	{1-99}-{1-2}-##-tmg1-cp
10G Shelf switch 10 unit	{1-99}-{1-2}-##-switch10-cp	{1-99}-{1-2}-##-switch10-cp

**Table A-14. External User AIDs for Circuit Packs in the BWM 10G (OC-192) Shelf
(2 of 2)**

10G Shelf switch 20 unit	{1-99}-{1-2}-##-switch20-cp	{1-99}-{1-2}-##-switch20-cp
10G Shelf switch 30 unit	{1-99}-{1-2}-##-switch30-cp	{1-99}-{1-2}-##-switch30-cp
10G Shelf switch 40 unit	{1-99}-{1-2}-##-switch40-cp	{1-99}-{1-2}-##-switch40-cp
10G Shelf pproc1 unit	{1-99}-{1-2}-##-pproc1-cp	{1-99}-{1-2}-##-pproc1-cp
10G Shelf switch 50 unit	{1-99}-{1-2}-##-switch50-cp	{1-99}-{1-2}-##-switch50-cp
10G Shelf pproc2 unit	{1-99}-{1-2}-##-pproc2-cp	{1-99}-{1-2}-##-pproc2-cp
10G Shelf switch 51 unit	{1-99}-{1-2}-##-switch51-cp	{1-99}-{1-2}-##-switch51-cp
10G Shelf pproc3 unit	{1-99}-{1-2}-##-pproc3-cp	{1-99}-{1-2}-##-pproc3-cp
10G Shelf switch 41 unit	{1-99}-{1-2}-##-switch41-cp	{1-99}-{1-2}-##-switch41-cp
10G Shelf pproc4 unit	{1-99}-{1-2}-##-pproc4-cp	{1-99}-{1-2}-##-pproc4-cp
10G Shelf switch 31 unit	{1-99}-{1-2}-##-switch31-cp	{1-99}-{1-2}-##-switch31-cp
10G Shelf switch 21 unit	{1-99}-{1-2}-##-switch21-cp	{1-99}-{1-2}-##-switch21-cp
10G Shelf switch 11 unit	{1-99}-{1-2}-##-switch11-cp	{1-99}-{1-2}-##-switch11-cp
10G Shelf ctlmem0 unit	{1-99}-{1-2}-##-ctlmem0-cp	{1-99}-{1-2}-##-ctlmem0-cp
10G Shelf ctlmem1 unit	{1-99}-{1-2}-##-ctlmem1-cp	{1-99}-{1-2}-##-ctlmem1-cp

**Switch Shelf Circuit
Pack AIDs****Table A-15. External User AIDs for Circuit Packs in the Switch (SW) Shelf**

Entity	Input AID	Output AID
SW Shelf All of the circuit packs on the shelf	sw{1-4}-1-#-#-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.
Switch Shelf swiex0 unit	sw{1-4}-1-#-#-swiex0-cp	sw{1-4}-1-#-#-swiex0-cp
Switch Shelf BSW unit	sw{1-4}-1-#-#-bsw{01-16}-cp	sw{1-4}-1-#-#-bsw{01-16}-cp
Switch Shelf tmg0 unit	sw{1-4}-1-#-#-tmg0-cp	sw{1-4}-1-#-#-tmg0-cp
Switch Shelf tmg1 unit	sw{1-4}-1-#-#-tmg1-cp	sw{1-4}-1-#-#-tmg1-cp
Switch Shelf swiex1 unit	sw{1-4}-1-#-#-swiex1-cp	sw{1-4}-1-#-#-swiex1-cp

**BWM 2.5G (DS3/
EC1) I/O Shelf Port
AIDs****Table A-16. External User AIDs for Ports in the BWM 2.5G (DS3/EC1) I/O Shelf (1 of 3)**

Entity	Input AID	Output AID
I/O Shelf All the ports on the shelf	{1-99}-{1-2}-#-#-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.
I/O Shelf All the unprotected ports on the shelf	{1-99}-{1-2}-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.
All the protected and unprotected ports for the PM related TL1 commands ONLY.	{1-99}-{1-2,all}-{u,#}-#-all-all {1-99,all}-all-{u,#}-#-all-all	This AID is specific to the Performance Monitoring TL1 commands.

Table A-16. External User AIDs for Ports in the BWM 2.5G (DS3/EC1) I/O Shelf (2 of 3)

Entity	Input AID	Output AID
DS3/EC1 I/O Shelf Generic DS3/EC1 port	{1-99}-{1-2}-#-#{01-06, 11-16}-{1-8,all}	{1-99}-{1-2}-u-#{01-06, 11-16}-{1-8}
DS3/EC1 I/O Shelf Generic OC3 port	{1-99}-{1-2}-#-#{01-16}-{1-4,all}	{1-99}-{1-2}-#-#{01-16}-{1-4} Note: #(s) will be filled in
DS3/EC1 I/O Shelf Generic OC12 port	{1-99}-{1-2}-#-#{01-16}-{1-2,all}	{1-99}-{1-2}-#-#{01-16}-{1-2} Note: #(s) will be filled in
BWM DS3/EC1 & STM1EE4 I/O Shelves Generic Unprotected Port	{1-99}-{1-2}-u-#{01-16}-{1-8, all} {1-99}-{1-2}-#-#{01-16}-{1-8, all}	{1-99}-{1-2}-u-#{01-16}-{1-8}
DS3/EC1 Shelf DS3/EC1 Pro- tected and Unprotected Port	{1-99}-{1-2}-u-#{01-06,11-16}-{1-8, all} {1-99}-{1-2}-#-#{01-06,11-16}-{1-8, all}	{1-99}-{1-2}-u-#{01-06,11-16}-{1-8}
DS3/EC1 I/O Shelf Optical (OC-3) Unprotected 0x1 Port	{1-99}-{1-2}-u-#{01-16}-{1-4, all} {1-99}-{1-2}-#-#{01-16}-{1-4, all}	{1-99}-{1-2}-u-#{01-16}-{1-4}
DS3/EC1 I/O Shelf Optical (OC-12) Unprotected 0x1 Port	{1-99}-{1-2}-u-#{01-16}-{1-2, all} {1-99}-{1-2}-#-#{01-16}-{1-2, all}	{1-99}-{1-2}-u-#{01-16}-{1-2}
DS3/EC1 I/O Shelf Optical (OC-48) Unprotected 0x1 Port	{1-99}-{1-2}-u-#{02,04,...14,16}-{1, all} {1-99}-{1-2}-#-#{02,04,...14,16}-{1, all}	{1-99}-{1-2}-u-#{02,04,...14,16}-1

Table A-16. External User AIDs for Ports in the BWM 2.5G (DS3/EC1) I/O Shelf (3 of 3)

Entity	Input AID	Output AID
DS3/EC1 I/O Shelf 1+1 OC-3, OC-12 and OC-48 Port (Port in a 1+1 facility protection group)	{1-99}-{1-2}-o{01-99}-{w,p}-{01-16}-{1-4,all} {1-99}-{1-2}-o{01-99}-{w,p}-## {1-99}-{1-2}-##-{01-16}-{1-4,all} Note: "w" stands for WORKING, or "p" stands for PROTECTION	{1-99}-{1-2}-o{01-99}-{w,p}-{01-16}-{1-4}
DS3/EC1 I/O Shelf OC-48 2 fiber BLSR port (Port in a 2 fiber BLSR facility protection group)	{1-99}-{1-2}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1,all} {1-99}-{1-2}-t{01-99}-{e,w}-## {1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}-{1,all} Note: {e,w} stands for East or West.	{1-99}-{1-2}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1}
DS3/EC1 I/O Shelf OC-48 4 fiber BLSR port (Port in a 4 fiber BLSR facility protection group)	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1,all} {1-99}-{1-2}-f{01-99}-{e,w}{w,p}-## {1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}-{1,all} Note: {e,w} stands for East or West and {w,p} stands for Working or Protection.	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1}

**BWM 10G
(OC-192) Shelf Port
AIDs****Table A-17. External User AIDs for Ports in the BWM 10G (OC-192) Shelf (1 of 2)**

Entity	Input AID	Output AID
10G Shelf Generic OC 192 port	{1-99}-{1-2}-##-tr{1-4}-{1,all}	{1-99}-{1-2}-##-tr{1-4}-1 Note: #(s) will be filled in
Unprotected Port	{1-99}-{1-2}-u-#{01-16}-{1-8, all} {1-99}-{1-2}-##-{01-16}-{1-8, all}	{1-99}-{1-2}-u-#{01-16}-{1-8}
10G Shelf Optical (OC-192) Unprotected 0x1 Port	{1-99}-{1-2}-u-#-tr{1-4}-{1,all} {1-99}-{1-2}-##-tr{1-4}-{1,all}	{1-99}-{1-2}-u-#-tr{1-4}-1

Table A-17. External User AIDs for Ports in the BWM 10G (OC-192) Shelf (2 of 2)

BWM 10G Shelf OC-192 1+1 Port	{1-99}-{1-2}-o{01-99}-{w,p}-tr{1-4}-{1,all} {1-99}-{1-2}-o{01-99}-{w,p}-## {1-99}-{1-2}-##-tr{1-4}-{1,all}	{1-99}-{1-2}-o{01-99}-{w,p}-tr{1-4}-{1}
	Note: "w" stands for WORKING, or "p" stands for PROTECTION	
10G Shelf OC-192 2 fiber BLSR port (Port in a 2 fiber BLSR facility protection group)	{1-99}-{1-2}-t{01-99}-{e,w}-tr{1-4}-{1,all} {1-99}-{1-2}-t{01-99}-{e,w}-## {1-99}-{1-2}-##-tr{1-4}-{1,all}	{1-99}-{1-2}-t{01-99}-{e,w}-tr{1-4}-{1}
	Note: {e,w} stands for East or West.	
10G Shelf OC-192 4 fiber BLSR port (Port in a 4 fiber BLSR facility protection group)	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-tr{1-4}-{1,all} {1-99}-{1-2}-f{01-99}-{e,w}{w,p}-## {1-99}-{1-2}-##-tr{1-4}-{1,all}	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-tr{1-4}-{1}
	Note: {e,w} stands for East or West and {w,p} stands for Working or Protection.	

BWM 2.5G (STM1EE4) I/O Shelf Port AIDs

Table A-18. External User AIDs for Ports in the BWM 2.5G (STM1EE4) I/O Shelf (1 of 3)

Entity	Input AID	Output AID
I/O Shelf All the ports on the shelf	{1-99}-{1-2}-##-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.
I/O Shelf All the unprotected ports on the shelf	{1-99}-{1-2}-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.
All the protected and unprotected ports for the PM related TL1 commands ONLY.	{1-99}-{1-2,all}-{u,##}-all-all {1-99,all}-all-{u,##}-all-all	This AID is specific to the Performance Monitoring TL1 commands.

**Table A-18. External User AIDs for Ports in the BWM 2.5G (STM1EE4) I/O Shelf
(2 of 3)**

STM1EE4 I/O Shelf Generic STM1EE4 port	{1-99}-{1-2}-#-#{01-06, 11-16}-{1-4,all}	{1-99}-{1-2}-u-#{01-06, 11-16}-{1-4}
STM1EE4 I/O Shelf Generic OC3 port	{1-99}-{1-2}-#-#{01-16}-{1-4,all}	{1-99}-{1-2}-#-#{01-16}-{1-4} Note: #(s) will be filled in
STM1EE4 I/O Shelf Generic OC12 port	{1-99}-{1-2}-#-#{01-16}-{1-2,all}	{1-99}-{1-2}-#-#{01-16}-{1-2} Note: #(s) will be filled in
STM1EE4 I/O Shelves Generic OC 48 port	{1-99}-{1-2}-#-#{02, 04, 06, 08,...14, 16}-{1,all}	{1-99}-{1-2}-#-#{02, 04, 06, 08,...14, 16}-1 Note: #(s) will be filled in
BWM DS3/EC1 & STM1EE4 I/O Shelves Generic Unprotected Port	{1-99}-{1-2}-u-#{01-16}-{1-8, all} {1-99}-{1-2}-#-#{01-16}-{1-8, all}	{1-99}-{1-2}-u-#{01-16}-{1-8}
STM1EE4 Shelf STM1EE4 Protected & Unprotected Port	{1-99}-{1-2}-u-#{01-06,11-16}-{1-4, all} {1-99}-{1-2}-#-#{01-06,11-16}-{1-4, all}	{1-99}-{1-2}-u-#{01-06,11-16}-{1-4}
STM1EE4 I/O Shelf Optical (OC-3) Unprotected 0x1 Port	{1-99}-{1-2}-u-#{01-16}-{1-4, all} {1-99}-{1-2}-#-#{01-16}-{1-4, all}	{1-99}-{1-2}-u-#{01-16}-{1-4}
STM1EE4 I/O Shelf Optical (OC-12) Unprotected 0x1 Port	{1-99}-{1-2}-u-#{01-16}-{1-2, all} {1-99}-{1-2}-#-#{01-16}-{1-2, all}	{1-99}-{1-2}-u-#{01-16}-{1-2}
STM1EE4 I/O Shelf Optical (OC-48) Unprotected 0x1 Port	{1-99}-{1-2}-u-#{02,04,...14,16}-{1, all} {1-99}-{1-2}-#-#{02,04,...14,16}-{1, all}	{1-99}-{1-2}-u-#{02,04,...14,16}-1

Table A-18. External User AIDs for Ports in the BWM 2.5G (STM1EE4) I/O Shelf (3 of 3)

STM1EE4 I/O Shelf 1+1 OC-3, OC-12 & OC-48 Port (Port in a 1+1 facility protection group)	{1-99}-{1-2}-o{01-99}-{w,p}-{01-16}-{1-4,all} {1-99}-{1-2}-o{01-99}-{w,p}-## {1-99}-{1-2}-##-{01-16}-{1-4,all}	{1-99}-{1-2}-o{01-99}-{w,p}-{01-16}-{1-4}
	Note: "w" stands for Working, or "p" stands for Protection	
STM1EE4 I/O Shelf OC-48 2 fiber BLSR port (Port in a 2 fiber BLSR facility protection group)	{1-99}-{1-2}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1,all} {1-99}-{1-2}-t{01-99}-{e,w}-## {1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}-{1,all}	{1-99}-{1-2}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1}
	Note: {e,w} stands for East or West.	
STM1EE4 I/O Shelf OC-48 4 fiber BLSR port (Port in a 4 fiber BLSR facility protection group)	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1,all} {1-99}-{1-2}-f{01-99}-{e,w}{w,p}-## {1-99}-{1-2}-##-{02, 04, 06, 08,...14, 16}-{1,all}	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1}
	Note: {e,w} stands for East or West and {w,p} stands for Working or Protection.	

**BWM 2.5G
(DS3/EC1) I/O Shelf
Tributary AIDs**
Table A-19. External User AIDs for Tributaries in the BWM 2.5G (DS3/EC1) I/O Shelf (1 of 3)

Entity	Input AID	Output AID
I/O Bays All the tribs on all the ports on all the slots	{1-99}-{1-2}-#-#-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.
I/O Bays All the tribs on all the unprotected ports on all the slots	{1-99}-{1-2}-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.

Table A-19. External User AIDs for Tributaries in the BWM 2.5G (DS3/EC1) I/O Shelf (2 of 3)

All the protected and unprotected tributaries for the PM related TL1 commands ONLY.	{1-99}-{1-2,all}-{u,#}-#-all-all-all {1-99,all}-all-{u,#}-#-all-all-all	This AID is specific to the Performance Monitoring TL1 commands.
2.5G DS3EC1 I/O Shelf Generic DS3/EC1 Tributary	{1-99}-{1-2}-#-#-{01-06, 11-16}-{1-8,all}-{1,all}	{1-99}-{1-2}-u-#-{01-06, 11-16}-{1-8}-1
2.5G DS3EC1 I/O Shelf Generic OC3 Tributary	{1-99}-{1-2}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-99}-{1-2}-#-#-{01-16}-{1-4}-{1-3} Note: #(s) will be filled in
2.5G DS3EC1 I/O Shelf Generic OC12 Tributary	{1-99}-{1-2}-#-#-{01-16}-{1-2,all}-{1-12,all}	{1-99}-{1-2}-#-#-{01-16}-{1-2}-{1-12} Note: #(s) will be filled in
2.5G DS3EC1 I/O Shelf Generic OC48 Tributary	{1-99}-{1-2}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-99}-{1-2}-#-#-{02, 04, 06, 08,...14, 16}-1-{1-48} Note: #(s) will be filled in
BWM 2.5G DS3/EC1 I/O Shelves Generic Unprotected Tributary	{1-99}-{1-2}-u-#-{01-16}-{1-8, all}-{1-48,all} {1-99}-{1-2}-#-#-{01-16}-{1-8, all}-{1-48,all}	{1-99}-{1-2}-u-#-{01-16}-{1-8}-{1-48}
2.5G DS3EC1 I/O Shelf DS3/EC1 Protected & Unprotected Tributary	{1-99}-{1-2}-u-#-{01-06,11-16}-{1-8,all}-{1,all} {1-99}-{1-2}-#-#-{01-06,11-16}-{1-8,all}-{1,all}	{1-99}-{1-2}-u-#-{01-06,11-16}-{1-8}-{1}
2.5G DS3EC1 I/O Shelf Optical (OC-3) Unprotected 0x1 Tributary	{1-99}-{1-2}-u-#-{01-16}-{1-4,all}-{1-3,all} {1-99}-{1-2}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-99}-{1-2}-u-#-{01-16}-{1-4}-{1-3}
2.5G DS3EC1 I/O Shelf Optical (OC-12) Unprotected 0x1 Tributary	{1-99}-{1-2}-u-#-{01-16}-{1-2,all}-{1-12,all} {1-99}-{1-2}-#-#-{01-16}-{1-2,all}-{1-12,all}	{1-99}-{1-2}-u-#-{01-16}-{1-2}-{1-12}
2.5G DS3EC1 I/O Shelf Optical (OC-48) Unprotected 0x1 Tributary	{1-99}-{1-2}-U-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-99}-{1-2}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-99}-{1-2}-u-#-{02, 04, 06, 08,...14, 16}-1-{1-48}

Table A-19. External User AIDs for Tributaries in the BWM 2.5G (DS3/EC1) I/O Shelf (3 of 3)

2.5G DS3EC1 I/O Shelf 1+1 OC-3, OC-12 & OC-48 Optical Tributary	{1-99}-{1-2}-o{01-99}-{w,p}- {01-16}-{1-4,all}-{1-48,all} {1-99}-{1-2}-o{01-99}-{w,p}- #-#{1-48,all} {1-99}-{1-2}-#-#{01-16}-{1- 4,all}-{1-48,all} Note: {w,p} stands for Work- ing or Protection.	{1-99}-{1-2}-o{01-99}-{w,p}- {01-16}-{1-4}-{1-48}
2.5G DS3EC1 I/O Shelf OC-48 2F BLSR Tributary	{1-99}-{1-2}-t{01-99}-{e,w}- {02, 04, 06, 08,...14, 16}- {1,all}-{1-48,all} {1-99}-{1-2}-t{01-99}-{e,w}- #-#{1-48,all} {1-99}-{1-2}-#-#{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} Note: {e,w} stands for East or West.	{1-99}-{1-2}-t{01-99}-{e,w}- {02, 04, 06, 08,...14, 16}-{1}- {1-48}
2.5G DS3EC1 I/O Shelf OC-48 4F BLSR Tributary	{1-99}-{1-2}-f{01-99}- {e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-99}-{1-2}-f{01-99}- {e,w}{w,p}-#-#{1-48,all} {1-99}-{1-2}-#-#{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} Note: {e, w} stands for East or West. {w, p} stands for Working or Protection.	{1-99}-{1-2}-f{01-99}- {e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1}-{1-48}

**BWM 10G
(OC-192) Shelf
Tributary AIDs****Table A-20. External User AIDs for Tributaries in the BWM 10G (OC-192) Shelf (1 of 2)**

Entity	Input AID	Output AID
I/O Bays All the tribs on all the ports on all the slots	{1-99}-{1-2}-#-#-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.
I/O Bays All the tribs on all the unprotected ports on all the slots	{1-99}-{1-2}-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.
All the protected and unprotected tributaries for the PM related TL1 commands ONLY.	{1-99}-{1-2,all}-{u,#}-#-all-all-all {1-99,all}-all-{u,#}-#-all-all-all	This AID is specific to the Performance Monitoring TL1 commands.
10G Shelf Generic OC192 Tributary	{1-99}-{1-2}-#-#-tr{1-4}-{1,all}- {1-192,all}	{1-99}-{1-2}-#-#-tr{1-4}-1-{1-192} Note: #(s) will be filled in
10G Shelf Optical (OC-192) Unprotected Tributary	{1-99}-{1-2}-u-#-tr{1-4}-{1,all}- {1-192,all} {1-99}-{1-2}-#-#-tr{1-4}-{1,all}- {1-192,all}	{1-99}-{1-2}-u-#-tr{1-4}-{1}-{1-192}

Table A-20. External User AIDs for Tributaries in the BWM 10G (OC-192) Shelf (2 of 2)

BWM 10G Shelf OC192 1+1Optical Tributary	{1-99}-{1-2}-o{01-99}-{w,p}-tr{1-4}-{1,all}-{1-192,all} {1-99}-{1-2}-o{01-99}-{w,p}-#-#- {1-192,all} {1-99}-{1-2}-#-#-tr{1-4}-{1,all}- {1-192,all} Note: {w,p} stands for Working or Protection.	{1-99}-{1-2}-o{01-99}-{w,p}-tr{1-4}-{1}-{1-192}
10G Shelf OC-192 2F BLSR Tributary	{1-99}-{1-2}-t{01-99}-{e,w}-tr{1-4}-{1,all}-{1-192,all} {1-99}-{1-2}-t{01-99}-{e,w}-#-#- {1-192,all} {1-99}-{1-2}-#-#-tr{1-4}-{1,all}- {1-192,all} Note: {e,w} stands for East or West.	{1-99}-{1-2}-t{01-99}-{e,w}-tr{1-4}-{1}-{1-192}
10G Shelf OC-192 4F BLSR Tributary	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}- tr{1-4}-{1,all}-{1-192,all} {1-99}-{1-2}-f{01-99}-{e,w}{w,p}- #-#-{1-192,all} {1-99}-{1-2}-#-#-tr{1-4}-{1,all}- {1-192,all} Note: {e, w} stands for East or West. {w, p} stands for Working or Protection.	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}- tr{1-4}-{1}-{1-192}

**BWM 2.5G
(STM1EE4) I/O
Shelf Tributary
AIDs****Table A-21. External User AIDs for Tributaries in the BWM 2.5G (STM1EE4) I/O Shelf (1 of 2)**

Entity	Input AID	Output AID
I/O Bays All the tribs on all the ports on all the slots	{1-99}-{1-2}-#-#-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.
I/O Bays All the tribs on all the unprotected ports on all the slots	{1-99}-{1-2}-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.
All the protected and unprotected tributaries for the PM related TL1 commands ONLY.	{1-99}-{1-2,all}-{u,#}-#-all-all-all {1-99,all}-all-{u,#}-#-all-all-all	This AID is specific to the Performance Monitoring TL1 commands.
2.5G STM1EE4 I/O Shelf Generic STM1EE4 Tributary	{1-99}-{1-2}-#-#-{01-06, 11-16}-{1-4,all}-{1,all}	{1-99}-{1-2}-u-#-{01-06, 11-16}-{1-4}-1
2.5G STM1EE4 I/O Shelf Generic OC3 Tributary	{1-99}-{1-2}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-99}-{1-2}-#-#-{01-16}-{1-4}-{1-3} Note: #(s) will be filled in
2.5G STM1EE4 I/O Shelf Generic OC12 Tributary	{1-99}-{1-2}-#-#-{01-16}-{1-2,all}-{1-12,all}	{1-99}-{1-2}-#-#-{01-16}-{1-2}-{1-12} Note: #(s) will be filled in
2.5G STM1EE4 I/O Shelf Generic OC48 Tributary	{1-99}-{1-2}-#-#-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-99}-{1-2}-#-#-{02, 04, 06, 08,...14, 16}-1-{1-48} Note: #(s) will be filled in
BWM 2.5G STM1EE4 I/O Shelves Generic Unprotected Tributary	{1-99}-{1-2}-u-#-{01-16}-{1-8,all}-{1-48,all} {1-99}-{1-2}-#-#-{01-16}-{1-8,all}-{1-48,all}	{1-99}-{1-2}-u-#-{01-16}-{1-8}-{1-48}
2.5G STM1EE4 I/O Shelf STM1EE4 Protected & Unprotected Tributary	{1-99}-{1-2}-u-#-{01-06,11-16}-{1-4,all}-{1,all} {1-99}-{1-2}-#-#-{01-06,11-16}-{1-4,all}-{1,all}	{1-99}-{1-2}-u-#-{01-06,11-16}-{1-4}-{1}
2.5G STM1EE4 I/O Shelf Optical (OC-3) Unprotected 0x1 Tributary	{1-99}-{1-2}-u-#-{01-16}-{1-4,all}-{1-3,all} {1-99}-{1-2}-#-#-{01-16}-{1-4,all}-{1-3,all}	{1-99}-{1-2}-u-#-{01-16}-{1-4}-{1-3}

Table A-21. External User AIDs for Tributaries in the BWM 2.5G (STM1EE4) I/O Shelf (2 of 2)

2.5G STM1EE4 I/O Shelf Optical (OC-12) Unprotected 0x1 Tributary	{1-99}-{1-2}-u-#{01-16}-{1-2,all}-{1-12,all} {1-99}-{1-2}-#-#{01-16}-{1-2,all}-{1-12,all}	{1-99}-{1-2}-u-#{01-16}-{1-2}-{1-12}
2.5G STM1EE4 I/O Shelf Optical (OC-48) Unprotected 0x1 Tributary	{1-99}-{1-2}-U-#{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-99}-{1-2}-#-#{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all}	{1-99}-{1-2}-u-#{02, 04, 06, 08,...14, 16}-1-{1-48}
2.5G STM1EE4 I/O Shelf 1+1 OC-3, OC-12 and OC-48 Optical Tributary	{1-99}-{1-2}-o{01-99}-{w,p}-{01-16}-{1-4,all}-{1-48,all} {1-99}-{1-2}-o{01-99}-{w,p}-#-#{1-48,all} {1-99}-{1-2}-#-#{01-16}-{1-4,all}-{1-48,all} Note: {w,p} stands for Working or Protection.	{1-99}-{1-2}-o{01-99}-{w,p}-{01-16}-{1-4}-{1-48}
2.5G STM1EE4 I/O Shelf STM1EE4 Protected & Unprotected Tributary	{1-99}-{1-2}-u-#{01-06,11-16}-{1-4,all}-{1,all} {1-99}-{1-2}-#-#{01-06,11-16}-{1-4,all}-{1,all}	{1-99}-{1-2}-u-#{01-06,11-16}-{1-4}-{1}
2.5G STM1EE4 I/O Shelf OC-48 2F BLSR Tributary	{1-99}-{1-2}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-99}-{1-2}-t{01-99}-{e,w}-#-#{1-48,all} {1-99}-{1-2}-#-#{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} Note: {e,w} stands for East or West.	{1-99}-{1-2}-t{01-99}-{e,w}-{02, 04, 06, 08,...14, 16}-{1}-{1-48}
2.5G STM1EE4 I/O Shelf OC-48 4F BLSR Tributary	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} {1-99}-{1-2}-f{01-99}-{e,w}{w,p}-#-#{1-48,all} {1-99}-{1-2}-#-#{02, 04, 06, 08,...14, 16}-{1,all}-{1-48,all} Note: {e, w} stands for East or West. {w, p} stands for Working or Protection.	{1-99}-{1-2}-f{01-99}-{e,w}{w,p}-{02, 04, 06, 08,...14, 16}-{1}-{1-48}

Fan AIDs**Table A-22. External User AIDs for Fans**

Entity	Input AID	Output AID
SC Shelf Fan	NA	sc-1-fan1
Switch Shelf Fan	NA	sw{1-4}-1-fan1
2.5G (DS3EC1) I/O Shelf Fan	NA	{1-99}-{1-2}-fan{1-2}
2.5G (STM1EE4) I/O Shelf Fan	NA	{1-99}-{1-2}-fan{1-2}
10G Shelf Fan	NA	{1-99}-{1-2}-fan{1-2}

DSX AIDs**Table A-23. External User AIDs for DSXs Left and Right - BWM 2.5G DS3/EC1 and STM1EE4 I/O Shelves**

Entity	Input AID	Output AID
2.5G DS3EC1 and STM1EE4 Shelves DS3 DSX Left	NA	{1-99}-{1-2}-dsx_left
2.5G DS3EC1 and STM1EE4 Shelves DS3 DSX Right	NA	{1-99}-{1-2}-dsx_right

**External Timing
Reference AIDs****Table A-24. External User AIDs for External Timing References**

Entity	Input AID	Output AID
External Timing reference 1	extref1	extref1
External Timing reference 2	extref2	extref2
External Line Timing reference 1	line1	line1
External Line Timing reference 2	line2	line2

**Incoming and
Outgoing Timing
Port AIDs****Table A-25. External User AIDs for Incoming and Outgoing Timing Ports**

Entity	Input AID	Output AID
External Timing Input Port 0	exttmg0	exttmg0
External Timing Input Port 1	exttmg1	exttmg1
External Timing Output Port 0	exttmg0_out	exttmg0_out
External Timing Output Port 1	exttmg1_out	exttmg1_out

BWM PM Parameter Tables

Introduction

The following tables consist of BWM SONET, SDH, and DS3 PM parameters.

Global Table Notes

The forward slash character (/) that appears in the SONET/SDH tables separates equivalent SONET and SDH rates, parameter names, and parameter values from each other.

SONET rates, parameter names, and parameter values appear to the *left* of the forward slash character (/). SDH rates, parameter names, and parameter values either follow *after* or appear to the *right* of the forward slash character (/). Here are some examples:

- The values of equivalent SONET OC-N and SDH STM-M rates are:
N=3 / M=1, respectively.
- For the two parameter names, CV-S / RS_N_BBE, the SONET name is CV-S and its SDH equivalent name is RS_N_BBE.
- The parameter values, 86400 / 86400 are the same SONET and SDH values.

Table A-26. SONET/SDH Section/Regenerator Section and Line/Multiplex Section Minimum Register Size (1 of 2)

PM Parameter	Rate (e.g., OC-N, EC1 / STM-M) N= 3, 12, 48, 192 M = 1e, 1o, 4o, 16o, 64o	Minimum Size for Accumulation Registers		Minimum Size for Threshold Registers	
		15 minute	1 day	15 minute	1 day
OPT	N = All M = 16o, 64o	Not Defined	Not Defined	Not Defined	Not Defined
OPR	N = All M = 16o, 64o	Not Defined	Not Defined	Not Defined	Not Defined
LBC	N = All M = 16o, 64o	Not Defined	Not Defined	Not Defined	Not Defined

**Table A-26. SONET/SDH Section/Regenerator Section and Line/Multiplex Section Minimum Register Size
(2 of 2)**

CV-S /RS_N_BBE	N = 3 / M = 1 N = 12 / M = 4 N = 48 / M = 16 N = 192 / M = 64	16777215 / 16777215	2147483647 / 2147483647	16777215 / 16777215	2147483647 / 2147483647
ES-S / RS_N_ES	N = All / M = All	900 / 900	86400 / 86400	900 / 900	86400 / 86400
SES-S /RS_N_SES	N = All / M = All	900 / 810	86400 / 77760	900 / 810	86400 / 77760
/ RS_N_UAS	/ M = 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 / MS_N_BBE CV-LFE / MS_F_BBE	EC1 N = 3 / M = 13N = 12 / M = 4 N = 48 / M = 16 N = 192 / M = 64	16777215 / 16777215	214748364 / 214748364	16777215 / 16777215	2147483647 / 2147483647
ES-L / MS_N_ES ES-LFE /MS_F_ES	N = All , EC1 / M = All	900 / 900	86400 / 86400	900 / 900	86400 / 86400
SES-L / MS_N_SES SES-LFE / MS_F_SES	N = All, EC1 / M = All	900 / 810	86400 / 77760	900 / 810	86400 / 77760
UAS-L / MS_N_UAS UAS-LFE /MS_F_UAS	N = All , EC1 / M = All	900 / 900	86400 / 86400	900 / 900	86400 / 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
PSD	N = All	900	86400	Not Defined	Not Defined

Table A-27. 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	n = 1 n = 3c	65535	8388607	65535	8388607
CV-PFE	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-28. SDH Path Minimum Register Size

PM Parameter	Rate m = 3, 4, 4-4c, 4-16c	Minimum Size for Accumulation Registers		Minimum Size for Threshold Registers	
		15 minute	1 day	15 minute	1 day
VC_N_BBE	m = 3 m = 4	65535	8388607	65535	8388607
VC_F_BBE	m = 4-4c m = 4-16c	16777215	2147483647	16777215	2147483647
VC_N_ES VC_F_ES	m = All	900	86400	900	86400
VC_N_SES VC_F_SES	m = All	810	77760	810	77760
VC_N_UAS VC_F_UAS	m = All	900	86400	900	86400

Table A-29. 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-30. SONET/SDH Section/Regenerator Section and Line/Multiplex Section Threshold Register Default Values

PM Parameter	Rate (e.g. OC-N, EC1 / STM-M) N = 3, 12, 48, 192 M = 1e, 1o, 4o, 16o, 64o	Default Value for Threshold Registers	
		15 minute	1 day
OPR	N = All M = 16o, 64o	Not Defined	Not Defined
OPT	N = All M = 16o, 64o	Not Defined	Not Defined
LBC	N = All M = 16o, 64o	Not Defined	Not Defined
CV-S / RS_N_BBE	N = All / M = All	Not Defined	Not Defined
ES-S / RS_N_ES	N = All / M = All	Not Defined	Not Defined
SES-S / RS_N_SES	N = All / M = All	Not Defined	Not Defined
/ RS_N_UAS	/ M = All	Not Defined	Not Defined
SEFS-S	N = All, EC1	Not Defined	Not Defined
LOSS-S	N = All	Not Defined	Not Defined
CV-L / MS_N_BBE CV-LFE / MS_F_BBE	N =All, EC1 / M = All	Not Defined	Not Defined
ES-L / MS_N_ES ES-LFE / MS_F_ES	N =All, EC1 / M = All	Not Defined	Not Defined
SES-L / MS_N_SES SES-LFE / MS_F_SES	N =All, EC1 / M = All	Not Defined	Not Defined
UAS-L / MS_N_UAS UAS-LFE / MS_F_UAS	N =All, EC1 / M = All	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-31. 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	n = 1	15	125
CV-PFE	n = 3c	25	250
	n = 12c	75	750
	n = 48c	300	3000
ES-P	n = 1	12	100
ES-PFE	n = 3c	20	200
	n = 12c	60	600
	n = 48c	240	2400
SES-P	n = All	3	7
SES-PFE			
UAS-P	n = All	10	10
UAS-PFE			
FC-P	n = All	Not Defined	Not Defined
FC-PFE			
PPJC-PGen	n = All	30	2880
NPJC-PGen			
PPJC-PDet			
NPJC-PDet			

Table A-32. SDH Path Threshold Register Default Values

PM Parameter	Rate m = 3, 4, 4-4c, 4-16c	Default Value for Threshold Registers	
		15 minute	1 day
VC_N_BBE VC_F_BBE	m = 3 m = 4 m = 4-4c m = 4-16c	Not Defined Not Defined Not Defined Not Defined	Not Defined Not Defined Not Defined Not Defined
VC_N_ES VC_F_ES	m = 3 m = 4 m = 4-4c m = 4-16c	Not Defined Not Defined Not Defined Not Defined	Not Defined Not Defined Not Defined Not Defined
VC_N_SES VC_F_SES	m = All	Not Defined	Not Defined
VC_N_UAS VC_F_UAS	m = All	Not Defined	Not Defined

Table A-33. 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-34. SONET Section SES Definition

Rate	K
EC-1	52
OC-3	155
OC-12	616
OC-48	2392

Table A-35. SONET Line SES Definition

Rate	K
EC-1	51
OC-3	154
OC-12	615
OC-48	2459

Table A-36. SONET Path SES Definition

Rate	K
STS-1	2400
STS-3c	2400
STS-12c	2400
STS-48c	2400

Table A-37. DS3 SES Definition

Minimum BER	Value of x
7.5×10^{-5}	2444
1×10^{-6} (Default)	44

Table A-38. 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	pbit	VMR	X	X	
			VM	X		
			No VM (D)			
	C-Bit Parity	cbit	VMR		X	X
			VM			X
			No VM (D)			
Unframed	Clear-Channel	b3zs	Only No VM Allowed			

**NOTE:**

D): Default

CC: Clear Channel (which is different than framed (unchannelized))

Table A-39. SONET/SDH PM Summary Table

Interface	Level	Parameter	INTERFACE TYPE	
			EC-1	OC-N /STM-M
SONET/SDH	PHYSICAL	LBC	NA	*
		OPR	NA	*
		OPT	NA	*
	SONET SECTION/ SDH REGENERATOR SECTION	CV-S /RS_N_BBE	NA	X
		ES-S / RS_N_ES	NA	X
		SES-S / RS_N_SES	NA	X
		/ RS_N_UAS	NA	X for M = 1,4,16,64
		SEFS-S	X	X
		LOSS-S	NA	X
	SONET LINE/ SDH MULTIPLEX SECTION	CV-L / MS_N_BBE	X	X
		CV-LFE / MS_F_BBE	X	X
		ES-L / MS_N_ES	X	X
		ES-LFE / MS_F_ES	X	X
		SES-L / MS_N_SES	X	X
		SES-LFE / MS_F_SES	X	X
		UAS-L / MS_N_UAS	X	X
		UAS-LFE / MS_F_UAS	X	X
		FC-L	X	X
		FC-LFE	X	X
		AISS-L	X	X
		PSC	NA	X
		PSD	NA	X
			INTERFACE TYPE STM-M	
SDH	SDH HIGH ORDER PATH	VC_N_BBE	X	
		VC_F_BBE	X	
		VC_N_ES	X	
		VC_F_ES	X	
		VC_N_SES	X	
		VC_F_SES	X	
		VC_N_UAS	X	
		VC_F_UAS	X	

* Physical PM is not available for OC-3, OC-12 or 10, 40 interfaces using uncooled lasers.

Table A-40. 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	

BWM Alarms/Events Tables with Condition Description Parameters

Introduction

The alarms/events tables list the condition description parameters associated with the SONET and SDH 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 Alarm Severity Assignment Profile (ASAP) profile types. A column in each table lists the **ED-ASAP-PROF** command ASAP input parameters. This TL1 command can be used to modify the severity associated with a parameter and that severity determines whether or not the parameter represents an alarm or event.

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), NR (Not-Reported).

Type of AID and Alarmed Entity

The terms, Type of AID and the Alarmed Entity go hand-in-hand: they describe the entity that may be alarmed. For example, the Type of AID might be "logical tributary" and the Alarmed Entity might be "{rr} CS" where {rr} may represent the set of values 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-41. 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 modifier / aidtype: STM1, STM4, STM16, STM64			
MJ	fop	APSFOP	Communications, 1+1 opt prot grp , APS Failure of Protocol Communications, 1+1 opt prot grp , APS Failure of Protocol-cleared
MJ	psbyte	APSB	Communications, 1xN opt prot grp , APS Prot Switch Byte Failure Communications, 1xN opt prot grp , APS Prot Switch Byte Failure-cleared
MJ	chnlmm	APSCM	Communications, 1xN opt prot grp , APS Channel Mismatch Communications, 1xN opt prot grp , APS Channel Mismatch-cleared
MJ	modemm	APSMM	Communications, 1xN opt prot grp , APS Mode Mismatch Communications, 1xN opt prot grp , APS Mode Mismatch-cleared
MJ	feplf	FEPRLF	Communications, 1xN opt prot grp , APS Far-End Prot Line Failure Communications, 1xN opt prot grp , APS Far-End Prot Line Failure-cleared
MJ	painvld	APSPAI	Communications, 1xN opt prot grp , APS Port Assignment Invalid Communications, 1xN opt prot grp , APS Port Assignment Invalid-cleared

Table A-42. BLSR ASAP Profile
(1 of 3)

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 modifier / aidtype / rr: STM16, STM64			
MJ	blsrinaps	APSC	Communications, BLSR prot grp , BLSR Inconsistent APS Codes Communications, BLSR prot grp , BLSR Inconsistent APS Codes-cleared
MJ	blsrimaps	APSPROV (aps provision)	Communications, BLSR prot grp , BLSR Improper APS Codes Communications, BLSR prot grp , BLSR Improper APS Codes-cleared
MJ	blsrdkb	BLSR-DKB	Communications, BLSR prot grp , BLSR Default K-bytes Communications, BLSR prot grp , BLSR Default K-bytes-cleared
MJ	nidm	NID-CONFL (NID conflict)	Communications, BLSR prot grp , Node ID Mismatch Communications, BLSR prot grp , Node ID Mismatch-cleared
MJ	blsrts	RNG-SQUELCH	Communications, {rr} port , BLSR Traffic Squelched Communications, {rr} port , BLSR Traffic Squelched-cleared
NA	etp	RNG-PREEMPT	Communications, BLSR prot grp , Extra Traffic Preempted Communications, BLSR prot grp , Extra Traffic Preempted-cleared
Properties of the following alarms/events Type of AID: protection group Alarm Duration: persistent modifier / aidtype: OC48, OC192 modifier / aidtype: STM16, STM64			
MN	rsmi	SQMAP-INCST	Communications, BLSR prot grp , Local Squelch Map Inconsistent Communications, BLSR prot grp , Local Squelch Map Inconsistent-cleared

Table A-42. BLSR ASAP Profile
(2 of 3)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
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	ropr	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
MJ	cable	RNG-CERR	Communications, BLSR prot grp, E/W Cable Error Communications, BLSR prot grp, E/W Cable Error-cleared
NA	rdip	RNG-DSCVY	Communications, BLSR prot grp , Ring Discovery in Progress Communications, BLSR prot grp , Ring Discovery in Progress-cleared
MJ	rsip	RNG-INITC	Communications, BLSR prot grp , Ring Startup in Progress Communications, BLSR prot grp , Ring Startup in Progress-cleared
MN	rcaud	CKTAUDSNP (ckt audit suspended)	Communications, BLSR prot grp, Ring Circuit Validation Suspended Communications, BLSR prot grp, Ring Circuit Validation Suspended-cleared

Table A-42. BLSR ASAP Profile
(3 of 3)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
NA	rcas	CKTAUDUD	Communications, BLSR prot grp, Ring Circuit Alarm Suppressed Communications, BLSR prot grp, Ring Circuit Alarm Suppressed-cleared
MJ	rpss	OVRDSW (override sw)	Communications, BLSR prot grp , Ring Prot Switching Suspended Communications, BLSR prot grp , Ring Prot Switching Suspended-cleared
MN	cperr	PAPRVERR (path prv err)	Communications, {rr} CS, Circuit Provisioning Error Communications, {rr} CS, Circuit Provisioning Error-cleared
MJ	pif	PAINTGRT	Communications, {rr} CS, Path Integrity Failure Communications, {rr} CS, Path Integrity Failure-cleared

Table A-43. 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 modifier / aidtype: VC3, VC4, VC44C, VC416C			
MN	psact	PSA	Communications, Path prot grp , Path Switch Active Communications, Path prot grp , Path Switch Active-cleared
NA	psfail	FAILTOSW	Communications, Path prot grp , Path Switch Failure Communications, Path prot grp , Path Switch Failure-cleared
NA	psinh	PSI	Communications, Path prot grp , Path Switch Inhibited Communications, Path prot grp , Path Switch Inhibited-cleared

Table A-44. 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
CR	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
CR	NR	sa_ds3idle nsa_ds3idle	ISD	Communications, DS3 port , DS3 Idle Signal Communications, DS3 port , DS3 Idle Signal-cleared

Table A-45. DS3OUT ASAP Profile (1 of 2)

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
NR	rfi	RFI-P	Communications, DS3 port , Remote Failure Indication - Path Communications, DS3 port , Remote Failure Indication - Path-cleared

Table A-45. DS3OUT ASAP Profile (2 of 2)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
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-46. DS3OUTSDH 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	hpf_ssf	SSF	Communications, DS3 port , HP Server Signal Failure Communications, DS3 port , HP Server Signal Failure-cleared
NR	hpf_rdi	RFI-P	Communications, DS3 port , HP Remote Defect Indication Communications, DS3 port , HP Remote Defect Indication-cleared
CR	hpf_tim	TIMM	Communications, DS3 port, HP Trace Identifier Mismatch Communications, DS3 port, HP Trace Identifier Mismatch-cleared
CR	hpf_uneq	UNEQ-P	Communications, DS3 port , HP Unequip Communications, DS3 port , HP Unequip-cleared
CR	hpf_plm	PLM-P	Communications, DS3 port , HP Payload Label Mismatch Communications, DS3 port , HP Payload Label Mismatch-cleared

Table A-47. 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	envron	MISC	Environmental, Misc Discrete, , {almmsg} Environmental, Misc Discrete, , {almmsg}-cleared

Table A-48. EQPT ASAP Profile (1 of 3)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: circuit pack Alarm Duration: persistent modifier / aidtype: EQPT				
CR	MN	sa_cpfail nsa_cpfail	EQPT	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
CR	MN	sa_cpuneq nsa_cpuneq	REPLUNITMISS (replaceable unit missing)	Equipment, {cpname}/{cpqual}, Circuit Pack Unequipped/Missing Equipment, {cpname}/{cpqual}, Circuit Pack Unequipped/Missing-cleared

Table A-48. EQPT ASAP Profile (2 of 3)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
MN	MN	sa_mcpuneq nsa_mcpuneq	REPLUNITMISS	Equipment, {cpname}/{cpqual} , Mate Circuit Pack Unequipped Equipment, {cpname}/{cpqual} , Mate Circuit Pack Unequipped-cleared
MN	MN	sa_nvmmw nsa_nvmmw	BKUPMEMP (primary bkup memory failure)	Equipment, {cpname}/{cpqual} , Non-Volatile Memory Wearout Equipment, {cpname}/{cpqual} , Non-Volatile Memory Wearout-cleared
Properties of the following alarms/events Type of AID: slot Alarm Duration: persistent modifier / aidtype: EQPT				
MN	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-48. EQPT ASAP Profile (3 of 3)

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_nvmsug nsa_nvmsug	BKUPMEMO	Processing error, Sys Ctlr Ck Pk , Non-Volatile Memory Usage Processing error, Sys Ctlr Ck Pk , Non-Volatile Memory Usage-cleared

Table A-49. SDH ASAP Profile (1 of 2)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent modifier / aidtype: STM1, STM1E, STM4, STM16, STM64				
CR	MN	sa_stmf_los nsa_stmf_los	STMLOS	Communications, {rr} port , STM Loss of Signal Communications, {rr} port , STM Loss of Signal-cleared
CR	MN	sa_rsf_lof nsa_rsf_lof	STMLOF	Communications, {rr} port , STM Loss of Frame Communications, {rr} port , STM Loss of Frame-cleared
NR	NR	sa_msf_ais nsa_msf_ais	MSAIS	Communications, {rr} port , MSect Alarm Indication Signal Communications, {rr} port , MSect Alarm Indication Signal-cleared

Table A-49. SDH ASAP Profile (2 of 2)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
NR	NR	sa_msf_rdi nsa_msf_rdi	MSRDI	Communications, {rr} port , MSect Remote Failure Indication Communications, {rr} port , MSect Remote Failure Indication-cleared
CR	MN	sa_rsf_tim nsa_rsf_tim	RSTIM	Communications, {rr} port , RSect Trace Identifier Mismatch Communications, {rr} port , RSect Trace Identifier Mismatch-cleared
CR	MN	sa_msf_exc nsa_msf_exc	MSEXC (thlev 3 to 5)	Communications, {rr} port , MSect Excessive Error Communications, {rr} port , MSect Excessive Error-cleared
MJ	MN	sa_msf_deg nsa_msf_de	MSDEG (thlev 5 to 9)	Communications, {rr} port , MSect Signal Degrade Communications, {rr} port , MSect Signal Degrade-cleared
NR	NR	sa_msf_ssf nsa_msf_ssf	MSSSF	Communications, {rr} port , MSect Server Signal Failure Communications, {rr} port , MSect Server Signal Failure-cleared
MN	MN	sa_dccrs nsa_dccrs	DCCRSF	Communications, {rr} port , DCC RSect Failure Communications, {rr} port , DCC RSect Failure-cleared
MN	MN	sa_dccms nsa_dccms	DCCMSF	Communications, {rr} port , DCC MSect Failure Communications, {rr} port , DCC MSect Failure-cleared
MN	MN	sa_lidrsmm nsa_lidrsmm	LIDRSM	Communications, {rr} port , LinkID RSect Mismatch Communications, {rr} port , LinkID RSect Mismatch-cleared
MN	MN	sa_lidmsmm nsa_lidmsmm	LIDMSM	Communications, {rr} port , LinkID MSect Mismatch Communications, {rr} port , LinkID MSect Mismatch-cleared
MN	MN	sa_unsrs nsa_unsrs	UNSRSF	Communications, {rr} port , User-Network Side RSect Failure Communications, {rr} port , User-Network Side RSect Failure-cleared
MN	MN	sa_unsms nsa_unsms	UNSMSF	Communications, {rr} port , User-Network Side MSect Failure Communications, {rr} port , User-Network Side MSect Failure-cleared

Table A-50. SONET ASAP Profile (1 of 2)

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_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
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	MN	sa_dccsect nsa_dccsect	EOC (embedded operations channel)	Communications, {rr} port , DCC Sect Failure Communications, {rr} port , DCC Sect Failure-cleared

Table A-50. SONET ASAP Profile (2 of 2)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
MN	MN	sa_dccline nsa_dccline	OSILINKERR	Communications, {rr} port , DCC Line Failure Communications, {rr} port , DCC Line Failure-cleared
MN	MN	sa_lidsectmm nsa_lidsectmm	EOC (embedded operations channel)	Communications, {rr} port , LinkID Sect Mismatch Communications, {rr} port , LinkID Sect Mismatch-cleared
MN	MN	sa_lidlinemm nsa_lidlinemm	OSILINKERR	Communications, {rr} port , LinkID Line Mismatch Communications, {rr} port , LinkID Line Mismatch-cleared
MN	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	MN	sa_unsline nsa_unsline	OSILINKERR	Communications, {rr} port , User-Network Side Line Failure Communications, {rr} port , User-Network Side Line Failure-cleared

Table A-51. SYS ASAP Profile (1 of 3)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: circuit pack Alarm Duration: temporary modifier / aidtype: COM			
NA	arst	AUTORESET	Processing error, {cpname}/{cpqual} , Autonomous Reset Note: issued just before a failed controller is reset due to a fatal software error.

Table A-51. SYS ASAP Profile (2 of 3)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
NR	swerr	SFT	Processing error, {cpname} / {cpqual} , Software Error, fatal
	swerr		Processing error, {cpname} / {cpqual} , Software Error, non-fatal
NA	omerr	WKGMEM	Processing error, {cpname} / {cpqual} , Out of Memory Error
NA	ferr	PROGFLT (program flt)	Processing error, Sys Ctlr Ck Pk , File Error, {affected NVM/ error type}
Properties of the following alarms/events Type of AID: system Alarm Duration: temporary modifier / aidtype: COM			
NA	stqlc	SYNCSTATCHNG (sync status chg)	Communications, System Timing , System Timing Quality Level Chg
NA	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			
NA	adbf	DBMEMTRF	Equipment, System , Auto Database Backup Failure
NR	almtst	TSA	Equipment, System , Alarm Test
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent modifier / aidtype / rr: STM1, STM4, STM16, STM64			
NA	dccrsdu	EOC (embedded operations channel)	Communications, {rr} port , DCC RSet Disable -Unavail- able Communications, {rr} port , DCC RSet Disabled-Unavail- able-cleared
NA	dccmsdu	OSILINKERR	Communications, {rr} port , DCC MSect Disabled-Unavail- able Communications, {rr} port , DCC MSect Disabled-Unavail- able-cleared
Properties of the following alarms/events Type of AID: port Alarm Duration: persistent			

Table A-51. SYS ASAP Profile (3 of 3)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
modifier / aidtype / rr: OC3, OC12, OC48, OC192			
NA	dccsectdu	EOC (embedded operations channel)	Communications, {rr} port , DCC Sect Disabled-Unavailable Communications, {rr} port , DCC Sect Disabled-Unavailable-cleared
NA	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 modifier / aidtype / rr: STM1, STM4, STM16, STM64			
NA	dcctypm	EOC (embedded operations channel)	Communications, {rr} port , DCC Type Mismatch Communications, {rr} port , DCC Type Mismatch-cleared

Table A-52. TIMING ASAP Profile (1 of 2)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: timing reference Alarm Duration: persistent modifier / aidtype: COM			
MJ	syncref	SYNC	Communications, Assgn Tmg Ref , Sync Reference Failure Communications, Assgn Tmg Ref , Sync Reference Failure-cleared

Table A-52. TIMING ASAP Profile (2 of 2)

Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
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-53. TRIBSDH ASAP Profile (1 of 2)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: logical tributary Alarm Duration: persistent modifier / aidtype / rr: VC3, VC4, VC44C, VC416C				
CR	NR	sa_auf_lop nsa_auf_lop	AULOP	Communications {rr} CS, AU Loss of Pointer Communications {rr} CS, AU Loss of Pointer-cleared
NR	NR	sa_auf_ais nsa_auf_ais	AUAIS	Communications, {rr} CS, AU Alarm Indication Signal Communications, {rr} CS, AU Alarm Indication Signal-cleared
NR	NR	sa_hpf_rdi nsa_hpf_rdi	HPRDI	Communications, {rr} CS, HP Remote Defect Indication Communications, {rr} CS, HP Remote Defect Indication-cleared
CR	NR	sa_hpf_tim nsa_hpf_tim	HPTIM	Communications, {rr} CS, HP Trace Identifier Mismatch Communications, {rr} CS, HP Trace Identifier Mismatch-cleared

Table A-53. TRIBSDH ASAP Profile (2 of 2)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
CR	NR	sa_hpf_uneq nsa_hpf_uneq	HPUNEQ	Communications, {rr} CS, HP Unequip Communications, {rr} CS, HP Unequip-cleared
NR	NR	sa_hpf_exc nsa_hpf_exc	HPExc (thlev 3 to 5)	Communications, {rr} CS, HP Excessive Error Communications, {rr} CS, HP Excessive Error-cleared
NR	NR	sa_hpf_deg nsa_hpf_deg	HPDEG (thlev 5 to 9)	Communications, {rr} CS, HP Signal Degrade Communications, {rr} CS, HP Signal Degrade-cleared
MJ	NR	sa_auf_srm nsa_auf_srm	AUSRM	Communications, {rr} CS, AU Signal Rate Mismatch Communications, {rr} CS, AU Signal Rate Mismatch-cleared

Table A-54. TRIBSONET ASAP Profile (1 of 2)

SA Alarm Level	NSA Alarm Level	ASAP Parameter	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: logical tributary Alarm Duration: persistent modifier / aidtype / rr: STS1, STS3C, STS12C, STS48C				
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	NR	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-54. TRIBSONET ASAP Profile (2 of 2)

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

The following alarms cannot have their alarm level changed and thus do not belong to an ASAP profile.

Table A-55. Non Provisionable Alarms (1 of 3)

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

Table A-55. Non Provisionable Alarms (2 of 3)

Alarm Level	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: system Alarm Duration: persistent modifier / aidtype: EQPT		
NA	RCVRY	Equipment, System , System in Restoration Mode Equipment, System , System in Restoration Mode-cleared
Properties of the following alarms/events Type of AID: 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 / rr: OC48, OC192 modifier / aidtype / rr: STM16, STM64		
NA	T-{montype}	Quality of service, {rr} port , Threshold Crossing Alert Quality of service, {rr} port , Threshold Crossing Alert-cleared This is for the physical layer.
Properties of the following alarms/events Type of AID: port Alarm Duration: temporary modifier / aidtype / rr: EC1, OC3, OC12, OC48, OC192 modifier / aidtype / rr: STM1, STM1E, SMT4, STM16, STM64		
NA	T-{montype}	Quality of service, {rr} port , Threshold Crossing Alert.
Properties of the following alarms/events Type of AID: logical tributary Alarm Duration: temporary modifier / aidtype / rr: EC1, OC3, OC12, OC48, OC192 modifier / aidtype / rr: STS1, STS3C, STS12C modifier / aidtype / rr: VC3, VC4		
NA	T-{montype}	Quality of service, {rr} CS , Threshold Crossing Alert.

Table A-55. Non Provisionable Alarms (3 of 3)

Alarm Level	condtype	conddescr The Alarmed Entity is bolded
Properties of the following alarms/events Type of AID: port Alarm Duration: temporary modifier / aidtype: T3		
NA	T-{montype}	Quality of service, DS3 port (incoming), Threshold Crossing Alert
		Quality of service, DS3 port (outgoing), Threshold Crossing Alert

Protection Switch Notification Tables

When there is a transition into a new state, protection switching events are reported by **REPT EVT** autonomous messages. These messages utilize *modifier*, *condtype*, and *conddescr* parameters.

These notes are referred to in the following tables:

Note 1: *condtype* is WKSWPR-2 for a switch to protection or WKSWBK for a switch to working. If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP.

Note 1a: *condtype* is WKSWPR-ep or WKSWPR-wp for a switch to protection or WKSWBK for a switch to working. If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP.

Note 2: *condtype* is WKSWPR-N for a switch to protection or WKSWBK for a switch to working (N is the letter N, not a variable). If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP.

Note 3: *condtype* is PS for a protection switch. If there was no change in the switch selection state, just a change in the state of the switching algorithm, then *condtype* is GP (General Purpose).

Table A-56. 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, AUTO SWITCH
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, LOCKOUT-CLEARED

Table A-57. 1+1 Optical, Revertive Protection Type (1 of 2)

Switch Request State	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr:OC3, OC12, OC48, OC192 modifier and rr:STM1, STM4, STM16, STM64		
lockout	WKSWPR-2, WKSWBK, GP (Note 1)	Protection switch, {rr} port, Lockout switch,, 1+1
forced	Note 1	Protection switch, {rr} port, Forced switch,, 1+1
no request	Note 1	Protection switch, {rr} port, No request,, 1+1
signal failed	Note 1	Protection switch, {rr} port, SF,, 1+1

Table A-57. 1+1 Optical, Revertive Protection Type (2 of 2)

Switch Request State	condtype	conddescr / comment
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-58. 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 modifier and rr::STM1, STM4, STM16, STM64		
lockout	PS, GP (Note 3)	Protection switch, {rr} port, Lockout switch,, 1+1
forced	Note 3	Protection switch, {rr} port, Forced switch,, 1+1
no request	Note 3	Protection switch, {rr} port, No request,, 1+1
signal failed	Note 3	Protection switch, {rr} port, SF,, 1+1
signal degraded	Note 3	Protection switch, {rr} port, SD,, 1+1
do not revert	Note 3	Protection switch, {rr} port, DNR,, 1+1
manual	Note 3	Protection switch, {rr} port, Manual switch,, 1+1

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-59. 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

Table A-60. PATHDRI / CONSTITUENTPATH Protection Types (1 of 2)

Switch Request State	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: protection group modifier and rr:STS1, STS3C, STS12C, STS48C modifier and rr:VC3, VC4, VC44C, VC416C		
lockout	WKSWPR-2, WKSWBK, GP (Note 1)	Protection switch, {rr} CS, Lockout switch
forced	Note 1	Protection switch, {rr} CS, Forced switch
no request	Note 1	Protection switch, {rr} CS, No request Note: If OPR-WKGLEG causes a protection switch for a revertive PATHDRI protection group, then a "No request" autonomous message is issued.
signal failed	Note 1	Protection switch, {rr} CS, SF

Table A-60. PATHDRI / CONSTITUENTPATH Protection Types (2 of 2)

Switch Request State	condtype	conddescr / comment
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-61. 2F Protection Type (1 of 2)

Switch Request State	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr:OC48, OC192 modifier and rr:STM16, STM64		
LP-A, LS-R, LP-S	WKSWPR-2, WKSWBK, GP (Note 1)	Protection switch, {rr} port, Lockout switch, LPA, 2F Also LSR, LPS.
SF-P, SF-S, SF-R	Note 1	Protection switch, {rr} port, Signal fail, SFP, 2F Previously: Protection switch, {rr} port, SFP,, 2F Also SFS, SFR.
FS-R	Note 1	Protection switch, {rr} port, Forced switch, FSR, 2F
SD-R	Note 1	Protection switch, {rr} port, Signal degrade, SDR, 2F
MS-R	Note 1	Protection switch, {rr} port, Manual switch, MSR, 2F
WTR	Note 1	Protection switch, {rr} port, Wait to restore, WTR, 2F
EXER-S, EXER-R	Note 1	Protection switch, {rr} port, Exercise, EXR, 2F

Table A-61. 2F Protection Type (2 of 2)

Switch Request State	condtype	conddescr / comment
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-62. 4F Protection Type (1 of 2)

Switch Request State	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: port modifier and rr:OC48, OC192 modifier and rr:STM16, STM64		
LP-A, LS-S, LS-R, LP-S	WKSWPR-ep, WKSWPR-wp, WKSWBK, GP (Note 1a)	Protection switch, {rr} port, Lockout switch, LPA, 4F Also LSS, LSR, LPS.
SF-P, SF-S, SF-R	Note 1a	Protection switch, {rr} port, Signal fail, SFP, 4F Previously: Protection switch, {rr} port, SFP,, 4F Also SFS, SFR.
FS-S, FS-R	Note 1a	Protection switch, {rr} port, Forced switch, FSS, 4F Also FSR.
SD-P, SD-S, SD-R	Note 1a	Protection switch, {rr} port, Signal degrade, SDP, 4F Also SDS, SDR.
MS-S, MS-R	Note 1a	Protection switch, {rr} port, Manual switch, MSS, 4F Also MSR.
WTR	Note 1a	Protection switch, {rr} port, Wait to restore, WTR, 4F

Table A-62. 4F Protection Type (2 of 2)

Switch Request State	condtype	conddescr / comment
EXER-S, EXER-R	Note 1a	Protection switch, {rr} port, Exercise, EXR, 4F Also EXS.
RR-S, RR-R	Note 1a	Protection switch, {rr} port, Reverse request, RRS, 4F Also RRR.
NR	Note 1a	Protection switch, {rr} port, No request, NR, 4F.

Table A-63. Timing Reference Protection Type

Switch Request State	Lockout State	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: timing reference modifierCOM			
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-64. Clock Mode Protection Type

Current Selection State	condtype	conddescr / comment
Properties of the following switch notifications Type of AID: system modifierCOM		
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-65. 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-66. 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 and Acronyms

Numerics

5ESS®

Number 5 Electronic Switching System

5TAD

Five Tributary Add/Drop subrack (WaveStar™ ADM 16/1)

9TAD

Nine Tributary Add/Drop subrack (WaveStar™ ADM 16/1)

12NC

12-digit Numerical Code

A

AAU

Alarm Adapter Unit (RR)

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
ADM-155C	Add/Drop Multiplexer 155 Mb/s Compact Subrack (ADM-155C)
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
ASAP	Alarm Severity Assignment Profile
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

BC

Board Controller

BCC

Board Controller Complex

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

BITS

Building Integrated Timing Supply

BLD OUT LG

Build-Out Lightguide

BLK

Blank

BLSR

Bidirectional Line-Switched Ring

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 Cross-Connect (WaveStar™ ADM 16/1)
CCITT	Comité Consultatif International Télégraphique & Téléphonique
CCS	Common Channel Signaling
CEPT	Conférence Européenne des Administrations des Postes et des Télécommunications
CILINK	Communication Interface Link
CIT or CIT-PC	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
CONN PCB	Connector Printed Circuit Board
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	System Controller (ISM)
CTL/EI	Control/External Interface circuit pack
CTL/MEM	Control/Memory 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

D

DACS/DCS	Digital Access Cross-Connect System
dB	Decibels
DC	Direct Current
DCC	Data Communications Channel
DCE	Data Communications Equipment
DCF	Data Communications Function
DCN	Data Communications Network
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
DPS	Data communication Packet Switch (ISM)
DRAM	Dynamic Random Access Memory
DS0, DS1, DS3	Digital Signal Levels 0, 1, 3

DS3EC1/8
8 Port DS3 or EC1 interface port unit

DS-n
Digital Signal, Level n

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 Cancellor

EC-1, EC-n
Electrical Carrier, Levels 1 and n

ECC
Embedded Control Channel

ECI
Equipment Catalog Item

EEPROM
Electrically Erasable Programmable Read-Only Memory

EIA
Electronic Industries Association

EM
Event Management

EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
EMS	Element Management System
EPROM	Erasable Programmable Read-Only Memory
EQ	Equipped
EQPT	Equipment
ES	Errored Seconds
ES	End System
ESD	Electrostatic Discharge
ESF	Extended Super Frame (DS1 signal format)
ESPG	Elastic Store & Pointer Generator
ETSI	European Telecommunications Standards Institute
EVT	Event

F

FAS	Frame Alignment Signal
FAW	Frame Alignment Word
FC	Full Contact Connector

FCC
Federal Communications Commission

FDDI
Fiber Distributed Data Interface

FE
Far End

FEBE
Far End Block Error

FEP
Front End Processor

FEPROM
Flash EPROM

FIT
Failure in Time

G

GB
Gigabytes

Gb/s
Gigabits per second

GHz
Gigahertz

GNE
Gateway Network Element

GR
Geographic Redundancy

GR-XXX
Bellcore General Requirement-XXX

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
ICB	Interconnection Box
ICP	InterConnection Panel
ID	Identifier
IEC	International Electrotechnical Committee

IEEE

Institute of Electrical and Electronics Engineers

IF

Intermediate Frequency

IFT

InterFace Terminal

I/O

Input/Output

IMF

Infant Mortality Factor

INTFC

Interface

IPS

Interprocessor Status

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 Télégraphique & 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

LBA

Lightwave Booster Amplifier

LBC

Laser Bias Current

LBFC

Laser Backface Currents

LBO

Lightguide Build-Out

LBO

Line Build-Out

LCN

Local Communications Network

LCT

Large Capacity Terminal

LDI

Linear Drop/Insert (Add/Drop)

LEC	Local Exchange Carrier
LED	Light-Emitting Diode
LEN	Local Exchange Node
LGX	Lightguide Cross-Connect
LH	Long Haul
LNC	Line Controller (SLM)
LO	Low Order
LOC	Line Overhead Controller (SLM)
LOF	Loss of Frame
LOM	Loss Of Multiframe
LOP	Loss of Pointer
LOS	Loss of Signal
LPA	Lower order Path Adaptation Lightwave Pre-Amplifier
LPBK	Loopback
LPC	Lower Order Path Connection
LPT	Lower Order Path Termination
LPU	Line Port Unit (ISM)

LPU155

Line Port Unit 155 Mb/s (ADM-155C)

LRX

Line Receiver (SLM)

LS

Low Speed

LTA

Line Terminal Application (SLM)

LTE

Line Terminating Equipment

LTX

Line Transmitter (SLM)

LTX/EML

Line Transmitter with Electro-absorption Modulated Laser (SLM)

M

μ

Microns

μm

Micrometer

MB

Megabytes

Mb/s

Megabits per second

MAF

Management Application Function

MCF

Message Communications Function

MCOND

Maintenance Condition

MD

Mediation Device

MDI

Miscellaneous Discrete Input

MDO	Miscellaneous Discrete Output
MEC	Manufacturer Executable Code
MEF	Maintenance Entity Function (in NE)
MEM	Memory
MF	Mediation Function
MFS	Multi-Frame Synchronization signal
MIB	Management Information Base
MIPS	Millions of Instructions Per Second
MJ	Major (alarm)
MMI	Man-Machine Interface
MML	Human-Machine Language
MN	Minor (alarm)
MO	Managed Object
MS	Multiplexer Section
ms	Millisecond
MS-SPRING	Multiplexer Section Shared Protection Ring
MSOH	Multiplexer Section OverHead

MSP	Multiplexer Section Protection
MST	Multiplexer Section Termination
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
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
NMC	Network Maintenance Center
NMON	Not Monitored
NMS	Network Management System
NMU	Network Mediation Unit
NNE	Non-SDH Network Element
NNI	Network Node Interface
NOMC	Network Operation Maintenance Channel
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

OC, OC-n

Optical Carrier

OC-1

Optical Carrier, Level 1 Signal (51.84 Mb/s)

OC-3

Optical Carrier, Level 3 Signal (155 Mb/s)

OC-3c (STS-3c)

Optical Carrier, Level 3 Concatenated Signal (155.52 Mb/s)

OC-12

Optical Carrier, Level 12 Signal (622.08 Mb/s)

OC12/STM4/1.3LR2

Optical Carrier 12/Synchronous Transport Module 4 port unit in the 1.3μ range with two bidirectional long reach ports.

OC12/STM4/1.3SR2

Optical Carrier 12/Synchronous Transport Module 4 port unit in the 1.3μ range with two bidirectional short reach ports.

OC-48

Optical Carrier, Level 48 (2488.32 Mb/s) (2.5 Gb/s)

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 1.3μ range with one bidirectional long reach port.

OC48/STM16/1.5LR1

Optical Carrier 48/Synchronous Transport Module 16 port unit in the 1.5μ 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.

OC-192

Optical Carrier, Level 192 (9953.28 Mb/s) (10 Gb/s)

ODF

Optical Distribution Frame

OI

Operations Interworking

OI

Optical Interface (WaveStar™ ADM 16/1)

OLS

Optical Line System

OOF

Out-of-Frame

OOS

Out-of-Service

OPS/INE

Operations System for Intelligent Network Elements

OR

Optical Remoting

OS

Operations System

OSB

Optical Splice Box

OSF

Open Software Foundation
Operations System Function

OSI

Open Systems Interconnect

OSMINE

Operations Systems Modifications for the Integration of Network Elements

OSWIF

Optical Switch Interface circuit pack

OW

Orderwire

P

PABX

Private Automatic Branch Exchange

PB-PCT

Paddle Board — Peripheral Control and Timing Link

PCB

Printed Circuit Board

PCM

Pulse Code Modulation

PCT-Link

Peripheral Control and Timing-Link

PCTFI

Peripheral Control and Timing Facility Interface

PDH

Plesiochronous Digital Hierarchy

PI

Physical Interface

Plesiochronous Interface (WaveStar™ ADM 16/1)

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

PPC

Pointer Processor and Cross-connect (ISM)

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

PT

Protected Terminal

Power supply filter and Timing circuit pack (WaveStar™ ADM 16/1)

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

RA

Regenerator Application (SLM)

RAM

Random Access Memory

RCU

Rigid Connect Unit (SLM)

RCV

Receive

RCVR

Receiver

RDDU

RCVR Data Distribution Unit (RR)

RDI

Remote Defect Indication

RDSV

Running Digital Sum Violations

REGEN

Regenerator (SLM)

REI

Remote Error Indicator

RF	Radio Frequency
RFI	Remote Failure Indication
RGU	ReGenerator Unit (SLM)
ROC	Regenerator Overhead Controller (SLM)
RPP	Reliability Prediction Procedure
RPS	Ring Protection Switching Radio Protection Switching System
RR	Radio Relay
RSM	Remote Switching Module
RSOH	Regenerator Section OverHead; part of SOH
RST	Regenerator Section Termination
RT	Remote Terminal
RTAC	Regional Technical Assistance Center
RTRV	Retrieve
RU	Relay Unit (RR)
RZ	Return to Zero

S

SA

Service Affecting

SA

Section Adaptation

Synchronous Adapter (WaveStar™ ADM 16/1)

SAI

Station Alarm Interface

SC

Square coupled Connector

System Controller (WaveStar™ ADM 16/1)

SCC

Smart Communication Channel

SCI

Station Clock Input

SCO

Station Clock Output

SCT

System Controller (for SLM LTA and REGEN Network Elements)

SD

Signal Degrade

Space Diversity

SDH

Synchronous Digital Hierarchy

SDH-TE

SDH — Terminal Equipment

SDS

Standard Directory Service based on ANSI recommendation T1.245

SEC

Secondary

SEC

SDH Equipment Clock

SEF

Support Entity Function (in a Network Element)

SEMF	Synchronous Equipment Management Function
SES	Severely Errored Seconds
SF	Super Frame (DS1 signal format)
SLC	Subscriber Loop Carrier
SH	Short Haul
SI	Synchronous Interface (WaveStar™ ADM 16/1)
SIB	Subrack Interface Box
SLM	Synchronous Line Multiplexer Signal Label Mismatch
SM-2000	Switching Module - 2000 generation
SML	Service Management Level
SMN	SDH Management Network
SMS	SDH Management Subnetwork
SNC/I	SubNetwork Connection (protection) / Inherent monitoring
SNC/NI	SubNetwork Connection/Non-Intrusive Monitoring
SNR	Signal-to-Noise Ratio
SOH	Section Overhead
SONET	Synchronous Optical Network

SPB2M

Subrack Protection for 2 Mb/s Board (ADM-155C)

SPE

Synchronous Payload Envelope

SPI

SDH Physical Interface

Synchronous-Plesiochronous Interface (WaveStar™ ADM 16/1)

SSM

Synchronization Status Marker

SSU_L

Synchronization Supply Unit — Local

SSU_T

Synchronization Supply Unit — Transit

STBY

Standby

STC

System Controller (for SLM ADM News)

STM-16

Synchronous Transport Module 16

STM-1, STM-n

Synchronous Transport Module, Levels 1 and n

STRING

Stretched Ring

STS

Synchronous Transport Signal

STS-1, STS-n

Synchronous Transport Signal, Levels 1 and n

STS-3c

Synchronous Transport, Level 3 Concatenated Signal

SU

Supervisory Unit (RR)

SUPV

Supervision Unit (ADM-155C)

SUPV_SVC

Supervision with Service Channel Unit (ADM-155C)

SVC	Switched Virtual Circuit
SWC	Switch Center
SWIEX	Switch Interface Expander circuit pack
SWIF	Switch Interface circuit pack
SWITCH/DS3EC1	Electrical Protection Switch for up to 96 DS3 signals port unit
SWITCH/STS576	576X576 STS-1/192x192 STM-1 Switch circuit pack
SWR	Switch Receive unit (SLM)
SWT	Switch Transmit unit (SLM)
SYNC	Synchronizer
SYSCTL	System Controller circuit pack
SYSTEMEM	System Memory circuit pack

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
TCM	Trellis Code Modulation
TDEV	Timing Deviation
TDM	Time Division Multiplexing
TERM	Terminal Multiplexer
TGU	Timing Generator Unit
THz	Terrahertz (10^{12} Hz)
TI	Timing Interface (WaveStar™ ADM 16/1)
TID	Target Identifier
TIRKS	Trunks Integrated Records Keeping System
TL1	Transaction Language 1
TLM	Telemetry Circuit Pack
TLP	Terminal with Line Protection
TMG/STRAT3	Stratum 3 Timing circuit pack
TMN	Telecommunications Management Network
TOC	Tributary Overhead Controller (SLM)
TOHCTL	Tributary Overhead Controller

TPU	Tributary Port Unit
TPU-PCT	Tributary Port Unit — Peripheral Control and Timing link
TPU2	Tributary Port Unit 2 Mb/s (ADM-155C)
TPU34/45	Tributary Port Unit 34/45 Mb/s (ADM-155C)
TPU155	Tributary Port Unit 155 Mb/s (ADM-155C)
TR	Technical Requirement
TRF	Transfer Unit (ADM-155C)
TSA	Time Slot Assignment
TSI	Time Slot Interchange
TSO	Technical Support Organization
TTP	Trail Termination Point
TU	Tributary Unit
TU PTR	Tributary Unit Pointer
TUG	Tributary Unit Group

U

UAS	Unavailable Seconds
UITS	Unacknowledged Information Transfer Service. Unconfirmed mode of LAPD operation.

ULDT
Ultra Long Distance Transmission

UNEQ
Path Unequipped

UPS
Uninterruptible Power Supply

UPSR
Unidirectional Path-Switched Ring

UTC
Universal Coordinated Time

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

WS

Work Station

WSF

Work Station Facility

WYSIWYG

What You See Is What You Get

X**X.25**

An ITU standard defining the connection between a terminal and a public packet-switched network

Glossary

Numerics

0×1 Line Operation

0×1 means unprotected operation. The connection between network elements has one bidirectional line (no protection line).

1+1 Active Unit State

Indicates which unit (working or protection) is active.

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.

1+1 Switch Request States

The following states are defined for 1+1 protection groups: Forced Switch, Equipment Fail (EF), No Request.

1×N Electrical Port Protection

When protection switching is done on a per-pack basis.

1×N Equipment Protection

1×N protection pertains to N number of circuit pack/port units protected by one circuit pack or port unit. When a protection switch occurs, the working signals are routed from the failed pack to the protection pack. When the fault clears, the signals revert to the working port unit.

1×N Multi-Cast Cross-Connection

Consists of N one-way cross-connections from an input tributary to N output tributaries. 1:N Multi-cast (for N>2) is most commonly associated with providing video services.

1×N Optical Port Protection

Where each optical port shall be protection switched independently of other ports on the same circuit pack.

1×N Switch Request State

The following states are defined for 1×N Electrical Interface Protection Switching: Forced Switch, Equipment Fail (EF), Manual Switch, Wait-to-Restore, No Request.

12-Digit Numerical Code (12NC)

Used to uniquely identify an item or product. The first ten digits uniquely identify an item. The eleventh digit is used to specify the particular variant of an item. The twelfth digit is used for the revision issue. Items with the first eleven digits the same, are functionally equal and may be exchanged.

576×576 STS-1/192×192 STM-1 Switch (SWITCH/STS576)

The SWITCH/STS576 circuit pack provides a 576×576 STS-1 192×192 STM-1 cross-connect function, a bidirectional line-switch ring control function, optical protection (OC-3, OC-12), and support of electrical protection switching.

1152/384 Platform

The configuration that supports 1152 STS-1 equivalent non-blocking service cross-connection capacity.

1152/384 Switch Center

An 1152/384 Switch Center is one partially-equipped Switch Shelf.

1152/384 Switch Complex

An 1152/384 Switch Complex is two Switch Bays, each with one partially-equipped Switch Shelf.

4608/1536 Platform

The configuration that supports 4608 STS-1 equivalent non-blocking service cross-connection capacity.

4608/1536 Switch Center

A 4608/1536 Switch Center is one fully-equipped Switch Shelf.

4608/1536 Switch Complex

A 4608/1536 Switch Complex is two Switch Bays, each with one fully-equipped Switch Shelf.

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.

Active Path

One of two signals entering a constituent path selector, the active path is the path currently being selected.

Add Connection

For the input side, it is any tributary from which the user can provision a cross-connection, in any port or port protection group which is NOT a BLSR. For the output side, it is any tributary to which the user can provision a cross-connection, in any port protection group which is a BLSR.

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 Shelf, as well as the Optical and Mixed Modules.

ADJCTL/DCCEI

Circuit pack that combines the functionality of the ADJCTL/DCC and CTL/EI circuit packs. The ADJCTL/DCCEI circuit pack is used in the Electrical, Optical, and Mixed Modules.

Add/Drop Multiplexer 155 Mb/s Compact Subrack (ADM-155C)

A network multiplexer that is designed to flexibly multiplex plesiochronous and STM-1 tributary port signals into STM-1 line port signals.

Administrative Unit (AU)

Carrier for TUs.

Administrative Unit Pointer (AU PTR)

Indicates the phase alignment of the VC-n with respect to the STM-N frame. The pointer position is fixed with respect to the STM-N frame.

Agent

Performs operations on managed objects and issues events on behalf of these managed objects. All SDH managed objects will support at least an agent. Control of distant agents is possible via local "Managers."

Alarm

Visible or audible signal indicating that an equipment failure or significant event/condition has occurred.

Alarm Adapter Unit (AAU)

Radio Relay circuit pack that is used for collection of external alarms and remote control of external equipment.

Alarm Collection Unit (ACU)

Radio Relay circuit pack that performs collection of equipment alarms, analogue measurement from internal monitoring points and calculating data.

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/indicator 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 Severity Assignment Profile (ASAP)

A user provisioned mechanism to control an alarm level.

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.

APS Channel

The signalling channel carried in the K1 and K2 bytes of the SONET overhead on the protection line. It is used to exchange requests and acknowledgments for protection switch actions.

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.

Autolock State

A state of the 1xN protection switch group with priority above "Automatic Protection Switching", and below the commands Clear, Lockout, and Forced Switch. The Autolock State supports the following two states: Locked – indicating the existence of an autolock condition, in which traffic from a particular service circuit pack is locked to protection, Unlocked – indicating no autolock condition is present and normal 1xN protection switching is occurring.

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 ITM-SC which was not a response to an ITM-SC 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**Backout to a Previous Generic**

The user initiated procedure whereby the system reverts from the current/most recent generic and back-to the previous generic.

Backup

The backup and restoration features provide the capability to recover from loss of NE data because of such factors as human error, power failure, NE design flaws, and software bugs.

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 Line-Switched Ring (BLSR)

A bidirectional ring in which protection switching is accomplished by switching working traffic into protection time slots in the line going in the opposite direction around the ring.

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 ones density requirements 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 ones density requirements 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.

Broadband Service Transport

STM-1 concatenation transport over the SLM for ATM applications.

Building Integrated Timing Supply (BITS)

A single clock that provides all the DS1 and/or composite clock timing reference to all other clocks in that building.

Byte

Refers to a group of eight consecutive binary digits.

Byte Switch (BSW)

A BSW (slice) circuit pack serves as a cross-connect at the byte level between STS-1/STM-1 signals for 4608x4608/1536x1536 switching.

C**C-Bit**

A framing format used for DS3 signals produced by multiplexing 28 DS1s into a DS3. This format provides for enhanced performance monitoring of both near-end and far-end entities.

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.

Channel State Provisioning

A feature that allows a user to suppress reporting of alarms and events during provisioning by supporting multiple states (automatic, in-service, and not monitored) for VT1.5 and STS-1 channels.

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.

Clear Command

Clears any active CIT switch request. Clear can be directed to a single electrical interface (working or protection) or to all electrical interfaces. The clear command is used to clear a Lockout, Forced Switch, or Manual Switch conditions, as well as release a Wait-to-Restore.

Client

Computer in a computer network that generally offers a user interface to a server.

Closed 4-Fiber BLSR

When all four ports of the BLSR are selected, then the user can provision one of the four ports as the "East Working Port", one port as the "East Protection Port", one port as the "West Working Port" and one port as the "West Protection Port." This arrangement is sometimes referred to as a two-sided node.

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.

COACH

A system of on-line support tools aimed at providing product news and bulletins, diagnostic services, compatibility information, and on-line documents.

Coding Violation (CV)

A performance monitoring parameter indicating 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.

Constituent Path Selector

A path-level protection switching function that selects the better of two constituent signals in the two logical input tributaries and operates at the constituent signal rate. A path protection group in a cross-connection with an STS-3 or STS-12 “pipe” cross-connection rate provides path-level protection switching for all the constituent signals carried by the cross-connection. There may be one or more constituent path selectors operating independently within each path protection group, one for each constituent signal in the logical output tributary. The path protection group adapts to the current constituent signal rates.

Constituent Signal

A signal at a constituent signal rate that is carried by a cross-connection leg.

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).

Container (C)

Carries plesiochronous signal, the “payload.”

Control Complex

A Control Complex is one equipped System Controller Bay, which provides the main control functions for WaveStar BandWidth Manager.

Control System Interface Expander (CSIEX)

The CSIEX circuit pack expands CTLI-D interfaces that connect to the SWIEX circuit packs and the SEC memory circuit packs. The CSIEX circuit pack also expands ON (Operations Network) interfaces that connect to the DS3EC1, Optical, and Mixed Shelves.

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 the network element.

Critical (CR)

Alarm that indicates a severe, service-affecting condition.

Cross-Connect Capacity

The total bandwidth of cross-connections as measured by the bandwidth of input and output tributaries. A system with N STS-1 equivalent input tributaries and N STS-1 equivalent output tributaries (referred to as "NxN") provides a cross-connection capacity of N STS-1 equivalents. This system could provide N one-way point-to-point cross-connections or N/2 two-way point-to-point cross-connections at the equivalent rate of STS-1.

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 "pipe" cross-connection rate, the constituent signals carried by the cross-connection can be either an STS-3c signal or three STS-1 signals. Similarly, for a cross-connection with an STS-12 "pipe" cross-connection rate, the constituent signals carried by the cross-connection can be either an STS-12c signal or an allowed mix of STS-3cs and STS-1s.

Cross-Connect Topologies

The different types of cross-connections, or configurations, that may be provisioned. These include: bridging, path-protected, and point-to-point. The topology of a cross-connection defines the number of legs in the cross-connection, whether the inputs and/or outputs of some legs are the same logical tributary, and whether any path protection groups are included.

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 it is part of. 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.

CTL/EI

Circuit pack that selects the 10Base-T from a CTL/DCC circuit pack and routes it to the backplane.

CTL/MEM

The CTL/MEM circuit pack stores information for WaveStar BandWidth Manager. A CTL/MEM circuit pack may be designated as either PRI (Primary) or SEC (Secondary).

CTL/SYS50D

The SYS50D circuit pack is a main controller (without memory) for WaveStar BandWidth Manager. The SYS50D is part of the System Controller Shelf.

CTL/SYS50DM

The SYS50DM circuit pack is a main controller for WaveStar BandWidth Manager. Two SYS50DM circuit packs are included in all modules of the Universal I/O Shelves.

Current Value

The value currently assigned to a provisionable parameter.

Cut-Through

Refers to a simple ASCII interface to an NE. It enables the user to send TL1 messages directly to the NE with no interpretation or assistance provided by the WaveStar CIT.

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.

DDM-1000

Lucent Technologies' Dual DS3 Multiplexer — A digital multiplexer that multiplexes DS1, DS1C, or DS2 signals into a DS3 signal or a 90 Mb/s or 180 Mb/s optical signal.

DDM-2000

Lucent Technologies SONET-ready network multiplexer that can function as a lightwave terminal. It is designed primarily for loop feeder and interoffice applications that work in existing asynchronous as well as the emerging SONET networks. Multiplexers that multiplex DS1, DS3, or EC-1 inputs into EC-1, OC-1, OC-3, or OC-12 outputs.

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 Cross-Connect Panel (DSX)

A panel designed to interconnect equipment that operates at a designated rate. For example, a DSX-3 interconnects equipment operating at the DS3 rate.

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 by time-division multiplexing several digital signals into a single composite digital signal.

Digital Section

A transmission span such as an STM-N or 565 Mb/s signal. A digital section may contain multiple digital channels.

Digital Signal Levels 0, 1, 3 (DS0, DS1, DS3)

An ANSI-defined signal or service level corresponding to the following: DS0 is 64 Kb/s, DS1 is 1.544 Mb/s (equivalent to T1), and DS3 is 44.736 Mb/s (equivalent to 28 T1 channels or T3).

Dimmed

The state of a control whose normal functionality is not currently available to a user (also referred to as grayed or disabled).

Directory Name

An ASCII string that fully specifies the path and the name of the target directory where the generic to be downloaded, the database to be restored, or the database to be backed up is to be found.

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.

Directory Service Network Element (DSNE)

A designated network element that is responsible for administering a database that maps network element names (TIDs) to addresses [NSAPs (network service access points)] in an OSI subnetwork. There can be one DSNE per ring. A DSNE can also be a GNE.

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.

DS1 Signal

Signal with a data rate of 1.544 Mb/s.

DS3EC1/8

Port unit that provides 8 bidirectional ports at the DS3 rate.

DS3EC1/8 Connector Panel

The two panels on one or both sides of a Facility Interface Sub-Shelf containing DS3EC1/8 port units. The DS3EC1/8 Connector Panels provide an interface between the DS3EC1/8 port units and the backplane via BNC-connectors.

DS3 Format

Specifies the line format of a DS3 interface port. For example, the initial value is M13, the common multiplexer format.

DS3 Idle Signal

A signal that can be applied to any output port that is not cross-connected to an input port. This signal lets downstream network elements know that the facility is operating normally even though it is not sending a normal DS3 signal.

DS3 Interface Port

Port on a circuit pack for DS3 connectors.

DS3 Signal

A logical or electrical B3ZS signal with a data rate of 44.736 Mb/s.

DSX-1, 2, 3

Digital cross-connect used to interconnect equipment, provide patch capability, and provide test access at the DS1, DS2, or DS3 level.

DUAL

An end terminal configuration that supports east-west transmission.

Dual Ring Interworking (DRI)

Provides path-level protection for selected circuits that are dual interconnected between two rings. The self-healing mechanisms of the two rings remain independent and together protect against simultaneous single failures on both rings (not affecting the interconnections). The DRI protection additionally protects against failures in either of the interconnections between the rings, whether the failure is a facility or interconnection node.

E**Electrical Carrier, Level 1 (EC-1)**

An electrical interface signal at the SONET rate of STS-1.

Electrical Module

One of the ways the bottom portion of a Universal I/O Shelf, the Facility Interface Sub-Shelf, may be populated. DS3EC1/8 port units are used to populate an Electrical Module.

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.

Entire System Start-Up Stage A

The amount of time from power-on reset (including system controller downloads to the individual controllers) until transmission is up. This should normally be less than 5 minutes.

Entire System Start-Up Stage B

The amount of time from power-on reset until the system is completely available for any external commands. This should normally be less than 5 minutes.

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.

Equipment Fail (EF) State

The protection group shall enter the EF state when any of its circuit packs are in the EF state, and no higher priority request (for example, Clear, Forced Switch) is present. The protection group leaves the EF state when all EF indications are cleared, or a higher priority request is received.

Equipment Protection

Relates to electrical interfaces, which are protected by 1xN equipment protection. This means that protection switching for electrical interfaces is supported at the level of the port unit (circuit pack). As a contrast, refer to line protection.

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.

Erbium

A soft rare earth element used in metallurgy and nuclear research.

Erbium Doped Fiber Amplifier (EDFA)

An amplifier that performs by having a light signal pass through a section of erbium-doped fiber and using the laser pump diode to amplify the signal.

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.

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 network element 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.

Exclude

A user initiated command, at the WaveStar CIT, to remove an entity from service.

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.

Extract

To physically remove a circuit pack from a slot, thus causing a system initiated removal of an entity from service.

Extra traffic

Unprotected traffic that is carried over protection channels when their capacity is not used for the protection of working traffic.

F**Facility**

A one- or two-way circuit that carries a transmission signal.

Facility Interface Sub-Shelf

The bottom row of a Universal I/O Shelf which may be equipped, depending on the port units and circuit packs used, as an Electrical, 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.

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*, BellCore 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.

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.

Forced Switch to Protection

The CIT command that forces the protection group to be the "Active Unit." The clear command is required to remove the Forced Switch state. While in the Forced Switch state the system may not switch the active unit either automatically, by means of the CIT Forced Switch, or Manual Switch 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 capable of housing shelves, such as a bay framework.

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.

FT-2000 ADR

Lucent Technologies' OC-48 rate Add/Drop Rings lightwave Terminal for 2-fiber BLSRs. It is designed primarily for interoffice applications. It supports adds links, drop links, and through links consisting of any of the following interfaces (DS3/EC-1, OC-3, IS, OC-12).

G**Gateway Network Element (GNE)**

A network element that passes information between other network elements and management systems through a data communication network.

Geographic Location

Location of the ITM-SC server. This is entered as part of the installation procedure of an ITM-SC.

Geographic Redundancy (GR)

Allows protection of management for a Network Element by assigning it to two ITM-SCs. The primary ITM-SC, usually manages the Network Element and is now in the protected domain. If the primary ITM-SC or the link between the Network Element and the primary fails, the secondary ITM-SC will automatically take over management of the Network Element and is now in the protecting domain. The two ITM-SCs are connected by a peer to peer link, over which they pass Geographic Redundancy management information. This link must be established before any Network Element can be protected by Geographic Redundancy.

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.

Host Controller

The NSAP of the subject NE.

Host Name

Name of the server on which the ITM-SC is running.

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**Idle**

An output port not cross-connected to an input port.

Idle Code

A signal transmitted downstream automatically from an idle output port. It can also be transmitted downstream by a manual command from a cross-connected output port.

Include

A user initiated command, at the WaveStar CIT, to restore an entity to service.

Individual Controller Start-Up Stage A

The amount of time from power-on reset until transmission is established for an individual controller. This should normally be less than 2.5 minutes.

Individual Controller Start-Up Stage B

The amount of time from power-on reset until the individual controller is completely available for any external commands. This should normally be less than 3 minutes.

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.

Integrated Transport Management Network Module (ITM NM)

Lucent Technologies' integrated network management system that provides a broad end-to-end view of the SONET network.

Integrated Transport Management SubNetwork Controller (ITM SNC)

Lucent Technologies' SONET element management layer system that provides fault, configuration, and security functions through the use of a GUI.

Intelligent Synchronous Multiplexer (ISM)

A network multiplexer that is designed to flexibly multiplex plesiochronous and STM-1 tributary port signals into STM-1 or STM-4 line port signals.

Interface Capacity

The total number of STS-1 equivalents (bidirectional) tributaries in all transmission interfaces with which a given transmission interface shelf can be equipped at one time. The interface capacity varies with equipage.

Intermediate System

A system which routes/relays management information. An SDH Network Element may be a combined intermediate and end system.

InterLATA

Circuits that cross outside the LATA and to an interexchange carrier.

IntraLATA

Circuits with both end-points within the LATA.

I/O Bay

An I/O Bay is capable of housing two Universal I/O Shelves. The Universal I/O Shelves are each divided into a SWIF Sub-Shelf and a Facility Interface Sub-Shelf.

I/O Complex

There are two types of I/O Complexes: local and remote. A local I/O Complex is one or more collocated I/O Bays that are electrically cabled to an associated Switch Complex. A remote I/O Complex is one or more I/O Bays that are located up to 1000 cable-feet away from and optically connected (using optical remoting) to an associated Switch Complex.

IS-IS Routing

The Network Elements in a management network, route packets (data) between each other using an IS-IS level protocol. The size of a network running IS-IS Level 1 is limited, and therefore certain mechanisms are employed to facilitate the management of larger networks.

For STATIC ROUTING, the capability exists for disabling the protocol over the LAN connections, effectively causing the management network to be partitioned into separate IS-IS Level 1 areas. In order for the ITM-SC to communicate with a specific Network Element in one of these areas, the ITM-SC must identify through which so-called Gateway Network Element this specific Network Element is connected to the LAN. All packets to this specific Network Element are routed directly to the Gateway Network Element by ITM-SC, before being re-routed (if necessary) within the Level 1 area.

For DYNAMIC ROUTING an IS-IS Level 2 routing protocol is used allowing a number of Level 1 areas to interwork. The Network Elements which connect an IS-IS area to another area are set to run the IS-IS Level 2 protocol within the Network Element and on the connection between other Network Elements. Packets can now be routed between IS-IS areas and the ITM-SC does not have to identify the Gateway Network Elements.

ITM-SC System Administrator

A user of the ITM-SC application with system administrator privileges.

J**Jitter**

Short term variations of amplitude and frequency components of a digital signal from their ideal position in time.

K

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 Build Out (LBO)

An equalizer network that guarantees the proper signal level and shape at the DSX panel.

Line Controller Local Area Network (LCLAN)

The internal local area network that provides communications between the controlled circuit packs.

Line Overhead Controller (LOC)

SLM circuit pack that accesses the overhead bytes from the high speed line.

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.

Line Timing

Refers to a network element that derives its timing from an incoming OC-N/STM-N signal.

Link

The mapping between in-ports and out-ports. It specifies how components are connected to one another.

Literal Character

A letter, digit, or symbol that is entered in a command. The first hyphen in UNIT-{1-64} is a literal character; the braces and the second hyphen are not literal characters.

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 I/O Bays that are electrically cabled to an associated Switch Complex.

Location

An identifier for a specific circuit pack, interface module, interface port, or communications link.

Lockout of Protection

The CIT command that prevents the system from switching traffic to the protection line from a working line. If the protection line is active when a "Lockout of Protection" is entered – this command causes the working line to be selected. The protection line is then locked from any Automatic, Manual, or Forced protection switches.

Lockout State

The Lockout State shall be defined for each working or protection circuit pack. The two permitted states are: None – meaning no lockout is set for the circuit pack, set meaning the circuit pack has been locked out. The values (None & Set) shall be taken independently for each working or protection circuit pack.

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. For example, an STS-1 tributary within an OC-N line or an STS-1 tributary associated with a DS3/EC-1 port.

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).

Loss of Frame (LOF)

A failure to synchronize to an incoming signal.

Loss of Pointer (LOP)

A failure to extract good data from a signal payload.

Loss of Signal (LOS)

The complete absence of an incoming signal.

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**M13**

A standard framing format used for DS3 signals produced by multiplexing 28 DS1s into a DS3. It also refers to a multiplexer that performs this function.

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.

Management Information Base (MIB)

The database in the Network Element and contains the configuration data of the Network Element. A copy of each MIB is available in the ITM-SC and is called the MIB image. Under normal circumstances the MIB and MIB image of one Network Element are synchronized.

Manager

Capable of issuing network management operations and receiving events. The manager communicates with the agent in the controlled network element.

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.

Manufacturer Executable Code (MEC)

Network Element system software in binary format that after being downloaded to one of the stores can be executed by the system controller of the network element.

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.

Message Communications Function (MCF)

Function that provides facilities for the transport and routing of Telecommunications Management Network messages to and from the Network Manager.

Mid-Span Meet

The capability to interface between two lightwave network elements of different vendors. This applies to high-speed optical interfaces.

Minor

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 Shelf, the Facility Interface Sub-Shelf, may be populated. A combination of OC48/STM16, OC12/STM4, and DS3EC1/8 port units is used to populate a Mixed Module.

Modify

A user initiated command, at the WaveStar CIT, to modify attributes within an existing entity.

Module

Term used to designate an equipped sub-shelf. For example, a SWIF Module is a Switch Interface Sub-Shelf that is equipped with SWIF packs.

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. 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 Shared Protection Ring (MS-SPRING)

A protection method used in SLM Add-Drop Multiplexer Network Elements.

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.

Multiplexing

The process of combining multiple signals into a larger signal at the transmitter by a multiplexer. The large signal is then split into the original smaller signals at the receiver by a demultiplexer.

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 Bellcore 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

Defined as all equipment that is controlled by one system controller. A node is not always directly manageable by a management system. A node may also be defined as any network element in a network.

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 Bidirectional Line-Switched Ring, but which cannot be preempted.

Non-Revertive Switching

In non-revertive switching, an active and stand-by 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 stand-by 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**On-Cable Identifier**

Also known as the Physical Shelf Identifier. This is a user provisionable parameter.

One-Way Path-Protected Cross-Connection

A two-legged interconnection between two STS-N input tributaries and one STS-N output tributary. It consists of one path protected group with two legs, a working leg and a protection leg. The path protection group is provisioned to provide path-level protection switching for all the constituent signals carried by the cross-connection. Each leg must be at the same cross-connection rate.

One-Way Point-to-Point Cross-Connection

A one-legged interconnection, that supports one-way transmission, between an input tributary and an output tributary at a particular transmission rate (for example, STS-1).

One-Way Roll Cross-Connection

An operation consisting of 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 the facility to another or from one tributary to another on the 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. This serves to minimize 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.

Open 4-Fiber BLSR

When only two ports of the BLSR are selected, then the user can provision the two ports in either of two ways, (a) one port as the “West Working Port” and one port as “West Protection Port”, or (b) one port as the “East Working Port” and one port as “East Protection Port.” This arrangement is also sometimes referred to as a one-sided node.

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, 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.

Operations System for Intelligent Network Elements (OPS/INE)

A Bellcore configuration management operations system.

Operator

A user of the system with operator-level user privileges.

Optical Carrier 48/Synchronous Transport Module 16 (OC48/STM16)

The OC48/STM16 port unit provides a bidirectional port at the OC-48- or STM-16-rate. The OC48/STM16 port unit is used in the OC48/STM16 Optical Modules and the Mixed Modules of the Universal I/O Shelf.

Optical Carrier n (OC-n)

An optical carrier signal at the SONET rate of n, where n equals 1, 3, 12, 48, or 192. The basic rate of an OC-1 signal is 51.84 Mb/s, equivalent to an STS-1, with other values of N direct multiples of this basic rate.

Optical Carrier nc (Concatenated)

An optical carrier signal at the SONET rate of n, where n equals 3, 12, or 48. The OC-3c signal is constructed by concatenating three STS-1 signals into an OC-3c. These three STS-1s are linked together with a single path overhead (rather than three) which increases the total available payload bandwidth over that of the three individual STS-1s.

Optical Channel

A OC-n/STM-n wavelength within an optical line signal. Multiple channels, differing by 1.5μm 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 Shelf, the Facility Interface Sub-Shelf, may be populated. OC48/STM16 port units are used to populate an Optical Module.

Optical Remoting

A future feature of WaveStar BandWidth Manager in which optical fibers and circuit packs connect interface bays. Optical Remoting is used to accomplish capacity expansion.

Optical Switch Interface (OSWIF)

The OSWIF circuit pack is used for optical remoting applications (future releases). The OSWIF circuit pack converts TXI data format into 1152/384, 4608/1536, 9216/3072 byte-sliced format utilized by the BSW circuit pack.

Orderwire (OW)

A dedicated voice-grade line for communications between maintenance and repair personnel.

Original Value Provisioning

Preprogramming of a system's original values at the factory. These values can be overridden using local or remote provisioning.

OSWIF Module

The OSWIF Module will be included in future releases of WaveStar BandWidth Manager that support optical remoting applications.

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**Paddle Board-Peripheral Control and Timing Link**

Is a small circuit board used in a 5ESS exchange for protection switching and optical to electrical conversion of the PCT-link.

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 Protection Group

The part of a cross-connection topology that is provisioned to provide path-level protection switching for all the constituent signals carried by the cross-connection. A path protection group can be identified as an entity by its logical output tributary and its cross-connection rate. A path protection group consists of one or more constituent path selectors.

Path Terminating Equipment

Network elements in which the path overhead is terminated.

Peer ITM-SC

The ITM-SC at one end of the Peer-to-Peer link.

Peer-to-Peer Link

Connection between two ITM-SCs with geographic redundancy. The link is used to coordinate the management of a Network Element.

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 21×2 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 offset 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 Protection Group

A user provisioned association of protected optical interface ports. This association is used for line protection. The group of ports represent both a protection switching entity and also a set of lines that carry services to/from another network element. The port protection groups also determine the set of logical tributaries from and to which cross-connections can be provisioned.

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.

Port Tributary

A path-level unit of bandwidth within a port, or the constituent signal/signals being carried in this unit of bandwidth. It may generally be assumed that a port tributary is an STS-1 tributary unless specified otherwise. For a port which is NOT in a port protection group (electrical port or unprotected group), a port tributary is the same entity as a logical tributary.

Port Unit

A transmission circuit pack that receives and transmits optical or electrical signals.

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 fail 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 AID

This shall be the port AID which has been assigned to be the protection port.

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 constituent path selector, the protection path is the path carrier by the protection cross-connection leg of the path protection group.

Protection Port Alarm Status

The highest alarm status associated with the protection port. Values shall be: Critical, Major, Minor, or Not Alarmed.

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.

Protection Tributary

A port tributary which can be used to protect the traffic carried by a working tributary in a port protection group, or a Logical Tributary that is associated with a Working Tributary within a common port protection group.

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).

Provisioning

The modification of certain programmable parameters that define how the node functions with various installed entities. These modifications are initiated locally or remotely by either a CIT or an OS. They may arrive at the node via the IAOLAN, CIT port, or any DCC channel. The provisioned data is maintained in NVM and/or hardware registers.

Q**Q-LAN**

Thin Ethernet LAN which connects the manager to Gateway Network Elements so that management information between Network Elements and management systems can be exchanged.

Quality Level (QL)

The quality of the timing signal(s) provided to clock a Network Element. The level is provided by the Synchronization Status Marker which can accompany the timing signal. If the System and Output Timing Quality Level mode is "Enabled", and if the signal selected for the Station Clock Output has a quality level below the Acceptance Quality Level, the Network Element "squelches" the Station Clock Output Signal, which means that no signal is forwarded at all.

Possible levels are:

- PRC (Primary Reference Clock)
- SSU_T (Synchronization Supply Unit - Transit)
- SSU_L (Synchronization Supply Unit - Local)
- SEC (SDH Equipment Clock)
- DUS (Do not Use for Synchronization)

R**Radio Protection Switching System**

Its main function is to handle the automatic and manual switching from a main channel to a common protection channel in an N+1 system.

Radio Relay

A point-to-point Digital Radio system to transport STM-1 signals via microwaves.

RCVR Data Distribution Unit

Radio relay circuit pack that performs distribution of the protection channel and the low priority traffic in the receiver side.

Reactive Maintenance

Refers to detecting defects/failures and clearing them.

Rearrangement

An internal roll feature that allows for removing fragmented bandwidths between shelves. The roll is an “errorless roll” between connections. The rearrangement function allows the repositioning of STS-1 or STS-3 tributaries from the 576 switch to the BSW or the HS switch. The reason for repositioning tributaries is to make STS-1s contiguous, and therefore, prevent blocking situations when cross-connecting concatenated signals.

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 Overhead Controller

SLM circuit pack that provides user access to the SDH overhead channels at repeater sites.

Regenerator Section Termination

Function that generates the Regenerator Section Overhead (RSOH) in the transmit direction and terminates the RSOH in the receive direction.

Relay Unit

Radio Relay circuit pack whose main function is to perform protection switching when the Alignment Switch in the demodulator unit is unable to perform protection switching.

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 STS-1 path terminating equipment that a downstream failure has been alarmed along the STS-1 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 I/O Complex

One or more I/O Bays that are located up to 1000 cable-feet away from and optically connected (using optical remoting) to an associated Switch Complex.

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.

Remove

A user initiated command at the WaveStar CIT to delete an entity and its associated attributes from the system.

Reservations

A WaveStar Bandwidth Manager feature that allows the user the option of “reserving” any tributaries on any transmission interfaces for the following two purpose: first, to enhance cross-connection completion performance and second, to allow an OS that does not have all of the information needed to make such cross-connections. The reservations of a tributary creates a two-way connection for that tributary between the transmission interface (for example, DS3/EC1, etc.) and the interface to the main cross-connection fabric (SWIF circuit pack), but not through the main cross-connect fabric (BSW). If tributaries at both ends of a desired cross-connection have these established connections, then a subsequent request to make a cross-connection between these tributaries needs only to operate on the main cross-connect fabric, not on the main fabric plus two interface shelf fabrics.

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.

Retrieve

A user initiated command at the WaveStar CIT to retrieve an entity state/status from the NE.

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.

Ring Side

When an optical interface is provisioned as a member of a port protection group for a specific type of protection, the port (line) is assigned a ring-side (West or East) and/or line name (working or protection) to identify its role. A 2-fiber BLSR has two lines identified by West and East ring-sides. A 4-fiber BLSR has four lines identified by West and East ring-sides and as working and protection lines within each side. With 1+1 line protection there are two lines identified as working and protection lines. With 1xN line protection there are N+1 lines identified as working lines through N and a protection line.

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.

Secondary ITM-SC

Backup ITM-SC for a Network Element should the primary ITM-SC fail. A Network Element should be provisioned normally on the primary ITM-SC and then be configured for use on the secondary.

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 Layer

The second of the four levels in a standard SONET signal, used to transport an STS frame across a physical medium. This layer uses the photonic layer to form the physical transport.

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) occurs.

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.

Service Preserving Reset

A reset on a controller that does not cause transmission hardware devices to be reset. Transmission service is preserved in the sense that the devices continue to operate and carry service.

Service Preserving Reset With Database Reload from NVM

A service preserving reset in which the database will be loaded from NVM into RAM and device settings will be rewritten to reflect values stored in NVM. If the values in NVM disagree with current device settings in hardware, then transmission could be impacted when new device settings are written.

Signal-to-Noise Ratio (SNR)

The relative strength of signal compared to noise.

Signal Rate

An attribute that defines the bit-rate and format of the signal. The signal rate is defined by the STS-N path-level signal bit-rate and format including the presence or absence of concatenation.

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- μ m 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 shelf 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.

Slot Provisioned

A slot will transition from empty to equipped when the circuit pack insertion is detected, validated, and the hardware registers are loaded. The slot remains so provisioned until the object is deprovisioned.

Smart Communication Channel (SCC)

An HDLC messaging channel between the SDH-TE and the 5ESS host node. Similar to the DCC messaging channels located in the STM-N section overhead.

Soft Windows

PC emulator package for Hewlett Packard platforms.

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.

Software Installation

The process of actually interpreting and unpacking the binary program of data, that was loaded in the NVM by a previous software download operation, and copying the constituent data items to their designated locations within the network element's memory.

Software Restore

The inverse of a Software Backup. The process of simultaneously copying the backed-up database, from the remote location, to the current network element's Primary-0 NVM and Primary-1 NVM.

Software Upgrade

A combination of the (a) software download, (b) install, and (c) commit process. An upgrade is performed when the system software is to be changed to a new release.

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.

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).

Station Clock Input (SCI)

An external clock may be connected to a Station Clock Input.

Status

The indication of a short-term change in the system.

STM-1 Equivalent

Unit of cross-connection capacity in terms of STM-1 bandwidth units, independent of the actual mix of cross-connection rates.

Stretched Ring (STRING)

An open ring in which each node is an Add-Drop Multiplexer. The end nodes operate with one high speed line equipped.

STS-1E

Now referred to as EC-1. A signal typically carried by coaxial cables from one equipment location to another. The term EC-1 refers to the organization and data rate of the signal and also to the voltage template the signal must conform to and the impedances for which the voltage template is valid.

STS-1 Equivalent

Unit of cross-connection capacity in terms of STS-1 bandwidth units, independent of the actual mix of cross-connection rates.

STS-1

The basic building block logical signal in the SONET standard with a data rate of 51.84 Mb/s.

STSX-1

Digital cross-connect used to interconnect equipment, provide patch capability, and provide test access at the STS-1 level.

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.

Supervisory Unit (SU)

Radio relay circuit pack that gives comprehensive supervision and control facilities to the user by collecting information from the alarm collection units and alarm adapter units.

Suppression

A process where service-affecting alarms that have been identified as an "effect" are not displayed to a user.

SWITCH/DS3EC1

Port unit responsible for implementing DS3EC1/8 1x12 protection switching for up to 96 DS3 signals.

Switch Bay

Each Switch Bay is capable of housing three shelves. The top shelf is reserved for a future OSWIF Shelf to facilitate optical remoting, the middle shelf is populated as a Switch Shelf, and the bottom shelf is used for cable storage.

Switch Center (SWC)

Logical grouping of BSW switch packs, TMG/STRAT3 circuit packs and SWIEX circuit packs in a Switch Shelf. The number of these circuit packs needed for a SWC depends on the size of the switch.

Switch Complex

The 4608/1536 Switch Complex includes two Switch Bays, each with one fully equipped Switch Shelf.

Switch Interface (SWIF)

The SWIF circuit pack converts TXI data format into 4608/1536 byte-sliced format utilized by the BSW circuit pack.

Switch Interface Capacity

The service-carrying capacity in STS-1 equivalent "Inter-Connection Links" between the transmission interface shelves and the main cross-connection fabric. Each STS-1 equivalent of switch interface bandwidth interconnects to one STS-1 equivalent of main fabric bandwidth (that is to say, one STS-1 equivalent inlet and one STS-1 equivalent outlet). The sum of all the switch interface capacity that can be equipped in the system is equal to the non-blocking service cross-connection capacity of the system.

Switch Receive Unit

SLM circuit pack that provides the cross-connect in the receive direction between high speed line time slots and low speed tributaries.

Switch Shelf

The Switch Shelf is located in the middle of a Switch Bay. A fully-equipped Switch Shelf contains 16 BSW circuit packs (for 4608/1536 switching) and two TMG and SWIEX circuit packs.

Switch Transmit Unit

SLM circuit pack that provides the cross-connect in the transmit direction between high speed line time slots and low speed tributaries.

Switching Module (SM)

An access module from the 5ESS switch.

Synchronization Messaging

Synchronization messaging is used to communicate the quality of network timing, internal timing status, and timing states throughout a subnetwork.

Synchronization Supply Unit (SSU)

A circuit pack that recovers and reshapes the clock signal in order to filter out jitter.

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 Equipment Management Function (SEMF)

Function that converts performance data and implementation specific hardware alarms into object-oriented messages for transmission over the DCC and/or Q-interface. It also converts object-oriented messages related to other management functions for passing across the S reference points.

Synchronous Line Multiplexer (SLM)

A line multiplexer that is designed to multiplex VC-4 and STM-1 tributary port signals into STM-16 line port signals.

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 Payload Envelope (SPE)

The combined payload and path overhead of an STS-1, STS-3c, STS-12c or STS-48c 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.

Synchronous Transport Signal (STS, STS-n)

The basic logical building block signal for SONET with a rate of 51.84 Mb/s for an STS-1 signal and a rate of n times 51.84 Mb/s for an STS-n signal.

System Administrator

A user of the computer system on which the system's OS software application can be installed.

System Controller (CTL)

ISM circuit pack that controls the configuration of an Intelligent Synchronous Multiplexer system.

System Controller (SC)

WaveStar™ ADM 16/1 circuit pack that controls and provisions all units. It also contains the data communication packet switch functionality which is necessary for routing of management information between Network Elements and their management system.

System Controller (SCT)

SLM Line Terminal and Regenerator Network Element circuit pack that provides the highest level of system control for the Synchronous Line Multiplexer system. The SCT circuit pack provides overall administrative control of the system. Its memory is included in the same one circuit pack.

System Controller (STC)

SLM Add-Drop Multiplexer Network Element circuit pack that provides the highest level of system control for the Synchronous Line Multiplexer system. The STC circuit pack provides overall administrative control of the system. Its memory is provided by the MEM circuit pack.

System Controller (SYSCTL)

OLS circuit pack that provides the highest level of system control for the Optical Line System. The SYSCTL circuit pack provides overall administrative control of the system. Its memory is provided by the SYSMEM circuit pack.

System Controller Bay

Consists of three shelves. For the initial release of WaveStar BandWidth Manager, the top shelf is available to house the NCC, the middle shelf is populated as the System Controller Shelf, and bottom shelf is used for cable storage.

System Controller Shelf

Located in the middle shelf of the System Controller Bay, the System Controller Shelf houses the main controllers for WaveStar BandWidth Manager.

System Memory Unit (MEM)

SLM Add-Drop Multiplexer Network Element circuit pack that provides the highest level of system control for the Synchronous Line Multiplexer system. The MEM circuit pack provides memory support for the System Controller (STC) circuit pack.

System Memory Unit (SYSMEM)

OLS circuit pack that provides the highest level of system control for the Optical Line System. The SYSMEM circuit pack provides memory support for the SYSCTL circuit pack.

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 (-).

Template

A collection of parameters that define a specific Network Element configuration.

A template gives the user the opportunity to configure parameters in a Network Element with a single operation. They are re-usable, and allow the user to configure the parameters in many Network Elements 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 Network Element type and can not be used for other Network Element types.

Test Access

A set of cross-connection topologies used in conjunction with a testing system to monitor and “split” signal paths for purposes of fault isolation.

Through (or Continue) Cross-Connection

A cross-connection where the source and destination use the same tributary number. For the input side, it is any tributary from which the user can provision a cross-connection, in any port protection group which is a BLSR. For the output side, it is any tributary from which the user can provision a cross-connection, in any port protection group which is a BLSR. The opposite line in a 2-fiber BLSR is the other line within the same port protection group. In a 4-fiber BLSR, the lines opposite each other are the two service lines within the same port protection group or the two protection lines within the same port protection group.

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).

Timing/Stratum 3 (TMG/STRAT3)

TMG/STRAT3 circuit pack provides a Stratum 3 clock for its shelves.

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.

Trellis Code Modulation

A combined coding and modulation scheme for improving the reliability of a digital transmission system without increasing the transmitted power or the required bandwidth.

Tributary

A signal of a specific rate (2 Mb/s, 34 Mb/s, 140 Mb/s, VC12, VC3, VC4, STM-1 or STM-4) that may be added to or dropped from a line signal.

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 STS-1 tributary within an OC-n port.

Tributary Overhead Controller (TOC)

SLM circuit pack that allows access to the overhead bytes of the incoming tributary signal.

Tributary Overhead Controller (TOHCTL)

OLS circuit pack that allows access to the overhead bytes of the Supervisory channel.

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.

Universal I/O Shelf

Two Universal I/O Shelves may be housed in one I/O Bay. The Universal I/O Shelves are each divided into a SWIF Sub-Shelf and a Facility Interface Sub-Shelf, which may be populated as an Electrical, Optical, or a Mixed Module.

Upstream

At or towards the source of the considered transmission stream, for example, looking in the opposite direction of transmission.

User Privilege

Permissions a user must perform on the computer system on which the system software runs.

The following users can be distinguished:

User Type	User Name	Permissions
System Administrator; this is NOT an ITM-SC user	root (fixed)	maintain platform.
Database Administrator; this is NOT an ITM-SC user	informix (fixed)	maintain database.
ITM-SC System Administrator	i2kadmin (fixed)	maintain ITM-SC application, maintain Network Element templates, maintain MEC files on the ITM-SC, set default ITM-SC parameters.
Supervisor	<i>free choice</i>	perform all data retrieval functions, perform all alarm suppression functions, perform configuration changes.
Operator	<i>free choice</i>	perform all data retrieval functions, perform all alarm suppression functions.

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.

Violation Monitor and Removal (VMR)

A provisionable mode for DS3 output that causes parity violations to be monitored and corrected before the DS3 signal is B3ZS encoded.

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.

Virtual Tributary (VT)

A structure designed for transport and switching of sub-STS-1 payloads. There are currently four sizes: VT1.5 (1.728 Mb/s), VT2 (2.304 Mb/s), VT3 (3.456 Mb/s), and VT6 (6.912 Mb/s).

Virtual Tributary Group (VT-G)

A 9-row by 12-column structure (108 bytes) that carries one or more VTs of the same size. Seven VT groups (756 bytes) are byte interleaved with the VT-organized synchronous payload envelope.

Voice Frequency (VF) Circuit

A 64 kilobit per second digitized signal.

Volatile Memory

Type of memory that is lost if electrical power is interrupted.

VT1.5 Tributary

A SONET logical signal with a data rate of 1.728 Mbps. In the 9-row structure of the STS-1 SPE, a VT1.5 occupies three columns. VT-structured STS-1 SPEs are divided into seven VT groups. Each VT group occupies twelve columns of the 9-row structure and, for VT1.5s, contains four VTs per group.

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. This 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 OC-n/STM-n signal into another wavelength.

WaveStar™ Optical Line System

Lucent Technologies' lightwave transmission system. Utilizing DWDM technology, the system combines multiple signals of different wavelengths, transmits the resulting signal over a single fiber, and then demultiplexes the signal at the receive end.

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 AID

This shall be the port AID which has been assigned to be the working port.

Working Path

One of two signals entering a constituent path selector, the working path is the path carried by the working cross-connection leg of the path protection group.

Working Port Alarm Status

The highest alarm status associated with the working port. Values are: Critical, Major, Minor, or Not Alarmed.

Working State

The working unit is currently considered active by the system and that it is carrying traffic.

Working Tributary (same as "service tributary")

A Logical Tributary. A member of a Protection Group. The tributary that is currently carrying traffic, but, which can be protected.

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.

XMTR Switch Unit

Radio Relay circuit pack that performs connections for protection switching and transmission of low priority traffic on the protection channel.

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).

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